

# Town of Aberdeen Bicycle & Pedestrian Plan



Town of  
*Aberdeen* North Carolina



September 2022

AECOM

## Acknowledgements

Thank you to the Steering Committee and residents of the Town of Aberdeen for their involvement and support in this planning process and commitment to pedestrian planning. This plan was funded through the North Carolina Department of Transportation (NCDOT) Integrated Mobility Division (IMD) Bicycle and Pedestrian Planning Grant Initiative.

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The Town of Aberdeen

Triangle Area Rural Planning Organization (TARPO)

The North Carolina Department of Transportation (NCDOT) Division 8

NCDOT Integrated Mobility Division (IMD)

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Comprehensive Bicycle and Pedestrian Plan

Town of Aberdeen



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## Executive Summary

The Town of Aberdeen Bicycle and Pedestrian Plan (Plan) is the culmination of a planning process to improve pedestrian safety, connectivity, health, and wellbeing through recommended bicycle and pedestrian infrastructure projects and community policies and programs. This effort was led by the North Carolina Department of Transportation's (NCDOT) Integrated Mobility Division (IMD), AECOM as the project consultant, and the locally appointed Steering Committee.

### Brief History and Overview of the Community

#### *Past Planning Efforts*

The Town of Aberdeen has had multiple planning efforts that have guided the growth and development of the Town and provided input on infrastructure development. The following documents were reviewed to understand the land use and regulatory environment in the Town and region:

- Aberdeen Strategic Plan
- Town of Aberdeen Comprehensive Land Development Plan (2019)
- Aberdeen Pedestrian Transportation Plan (2011)
- Aberdeen Bicycle Transportation Plan (2012)
- Town of Aberdeen - Unified Development Ordinance (2011)
- Aberdeen Downtown Streetscape Plan (2017)
- Moore County Comprehensive Transportation Plan (2018)
- Triangle Area Rural Planning Organization (TARPO) Bicycle & Pedestrian Planning Framework (2015)

The Town and its planning partners have a history of bicycle and pedestrian planning and many of the recommendations of previous planning efforts have resulted in improvements to the construction of new facilities for non-motorized users. There are several improvements planned and in design that were first identified in the 2011 pedestrian plan, including sidewalks on Johnson Street, sidewalks on Poplar Street, and proposed sidewalks associated with NCDOT improvements to US 1/15/501 and NC 211.

Recommendations in past planning documents have focused on connections to schools and other community facilities such as parks, as well as to the downtown area. This plan attempts to continue to connect these destinations, as well as provide a menu-list of recommended improvements that the Town can use to advance non-motorized mobility in the Town.

#### *Purpose and Process of this Plan*

The purpose of this Plan is to evaluate the existing bicycle and pedestrian conditions within Aberdeen and recommend programmatic and infrastructure projects to improve safety, connectivity, and wellbeing. This effort was led by the NCDOT Integrated Mobility Division (IMD), a project consultant, and a Steering Committee. The Steering Committee was formed by the Town and included residents, local business owners, and representatives from the IMD and TARRPO. Through the planning and development of this Plan, the Committee approved goals and objectives that guided the set of recommendations for infrastructure projects, policies, and programs. Public meetings were held for residents and stakeholders

to provide input on planning efforts, and close coordination with NCDOT Division 8 and Triangle Area Rural Planning Organization (TARPO) was conducted.

A vision statement was formed in collaboration with the Steering Committee for this Plan with the desired outcome of implementing bicycle and pedestrian projects, policies, and programs in Aberdeen. The importance and connection between active transportation and Aberdeen's legacy as a destination for recreation activities is underscored by the following vision statement:

#### **Aberdeen Bicycle & Pedestrian Plan Vision Statement**

*The Town of Aberdeen will be a place where people of all ages and diverse backgrounds have access to bicycle and pedestrian facilities and programs that promote the following: alternative transportation modes, exercise and wellbeing, safety, connectivity, and celebration and discovery of Aberdeen's culture and history.*

## **Plan Goals**

- Provide multimodal transportation choices beyond vehicular transportation modes to the residents of Aberdeen.
- Improve mobility by creating and providing safe pedestrian and bicycle networks, removing barriers to walking and bicycling, and enhancing connections between community origins and destinations such as schools, stores, houses of worships, and other institutions.
- Improve safety for pedestrians and cyclists through strategic, consistent, and connected pedestrian and bicycle facility improvements, education, and enforcement strategies.
- Recognize the environmental and public health benefits of walking and biking by providing active living environments with safe, connected, accessible facilities along with programs that encourage walking and bicycling.
- Provide economic benefits by creating more attractive walkable and bikeable communities and savings to households associated with having access to low-cost, non-motorized transportation and increased market access to local providers of goods and services.
- Educate the community as to the benefits of pedestrian activity and applicable rules and regulations.

## Key Findings and Recommendations

The planning process identified pedestrian and bicyclist safety and access to recreational activities as important issues facing the Town of Aberdeen. US 1/15/501 acts as a barrier to crosstown connectivity for bicyclists and pedestrians, even with the presence of the pedestrian underpass at Elm Street. This plan recommends several areas for potential crossing improvements, including a recommendation for a crossing study to identify safe crossing locations with NCDOT improvements in the corridor. The lack of pedestrian infrastructure throughout the community result in a challenge for the pedestrian mobility of residents and visitors alike. Infrastructure projects, policies, ordinances, and programs have been recommended to address these issues and achieve the vision of this Plan.

### *Recommended Infrastructure Projects*

The existing bicycle and pedestrian conditions of Aberdeen were analyzed and with input from the steering committee and public, recommended infrastructure improvements were developed and refined. The projects were then prioritized based on input from the steering committee and public. Prioritization was based on stakeholder input, constraints, opportunities, safety, and connectivity with public support given the most weight. Project recommendations consist of new sidewalks, new bicycle facilities, crosswalks, shared-use paths, and safety improvements. The full list of project recommendations is below, sorted by project number. The list includes the project types, and priority projects are identified with an asterisk.

*Table ES-1. Proposed Projects*

Project Number	Recommended Improvement	Improvement Type
1	Off-road connector between N Poplar St to slightly past Prospect Dr	Shared Use Paths
2*	Shared-use-path connector between Martin Park and proposed Aberdeen Creek Trail	Shared Use Paths
3*	Sidewalk/shared use path on Saunders Blvd from US 1 to Bethesda Rd	Pedestrian
4*	Aberdeen Creek Trails	Shared Use Paths
5	Sidewalks along Magnolia Dr, Mike Pl and Atrium St from US 1/15/501 to Lightwater Dr	Pedestrian
6	Poplar St sidewalks from Peach St to Johnson St/Providence Pl	Pedestrian
7	Sidewalk/shared use path along Midway Rd from Thomas Ave to N Sycamore St	Pedestrian
8	Shared use path on NC5 from US1/15/501 to Town limits	Shared Use Paths
9	Greenway to Rays Mill Pond (using creek and sewer easement)	Shared Use Paths
10	Bicycle facility along Bethesda Rd from Bethesda Ave to Town limits	Bicycle
11*	Elm St sidewalk extensions from Thomas Ave to N Sycamore St	Pedestrian
12	Shared-use path on Sycamore St	Shared Use Paths
13	Downtown to Malcolm Blue Farm Greenway	Shared Use Paths
14	Sidewalk on Saunders Ave, Wilder Ave, and S Pinehurst St (Access to Colonial Heights Park)	Pedestrian
15	Sidewalk along Bethesda St from Elm St to NC 211	Pedestrian
16	Roseland Rd sidewalks from Hydrangea Dr to Wilderness Ave	Pedestrian
17	Legacy Connector	Shared Use Paths

18*	Sidewalk on Pee Dee Rd from US 15/501 to NC 211	Pedestrian
19	Shared use path on 15/501	Shared Use Paths
20	Bethesda Pines Trail	Shared Use Paths
21	Collinswood Trail	Shared Use Paths
22	Aberdeen Elementary Trail	Shared Use Paths
23	Downtown Exercise Trail	Shared Use Paths
24	Paint Hill Trail	Shared Use Paths
25	One Down Street Trail	Shared Use Paths
26	Ray's Mill Park Trail	Shared Use Paths
27	Aberdeen Sportsplex Trail	Shared Use Paths
28	Montford St Sidewalk from US 15/501 to N Sycamore St	Pedestrian
29	N Sycamore St Sidewalk from E Main St to E Maple St	Pedestrian
30	S Sycamore St Sidewalk from W South St to Terminus	Pedestrian
31	Park Dr Sidewalk from Wilder Ave to Roseland Rd	Pedestrian
32	Martin Farms Sidewalk/Trail (proposed development)	Pedestrian
33	Roseland Rd paved shoulders from Sand Pitt Rd to US 1	Bicycle
34*	Pinehurst St paved shoulders from Roseland Rd to NC 5	Bicycle
35	US 1 Shared Use Path from Roseland Rd to NC 5	Bicycle
36	US 15/501 paved shoulders from US 1 to NC 211	Bicycle
37	NC 5/W South St shared lane markings from Pinehurst St to Poplar St	Bicycle
38	W Main St shared lane markings from Polar St to N Sycamore St	Bicycle
39	E Main St Bicycle Lane from N Sycamore St to Blue St	Bicycle
40	Blue St/Bethesda Ave shared lane markings from E Main St to Bethesda Rd	Bicycle
41	NC 211 paved shoulders from US 15/501 to Town limits	Bicycle
6a	Pavement markings (sharrows) and share the road signage on Poplar St from South St to US 1	Bicycle

\* - Priority projects

Nature-based and/or green infrastructure is also recommended for all large shared-use paths to address flooding and promote resiliency in the community. Wayfinding signage and lighting are recommended throughout the Town as a strategy for encouraging walking and bicycling by making the Town easier to navigate. It would also enhance the Town’s brand and identity and perceptions of safety.

*Policies and Programs*

Policies, ordinances, and programs that complement infrastructure projects are critical to a successful bicycle and pedestrian plan. Safety is dependent on physical elements, such as linear and spot improvements, as well as program and policy changes, such as active transportation-friendly ordinances, educational programs, reduction of speed limits, and enforcement of laws.

A comprehensive set of recommendations for code and ordinance updates can be found in Section 4.5: Recommended Policies. This includes a table of existing code/ordinances and recommended amendments or updates. High-level recommendations were made to the following: Article 3.8.5 Overlay Districts; Article 3.4 Business Zoning Districts, Table of Area, Setback, Living Area, and Height

Requirements; 5.9 Sidewalks; 6.4 Flood Damage Prevention Ordinance; 5.7 Signage Policy; and 5.10. Lighting Policy.

This Plan also makes several programmatic recommendations to improve safety, encourage physical activity, and enhance the local aesthetics of Aberdeen. Whereas infrastructure projects can be expensive to construct, programs are comparatively inexpensive to implement and can provide a tremendous benefit to the community. Other programmatic recommendations include safety campaigns to educate pedestrians, active transportation users and drivers, enhance safe access to schools, open street and walking events, public art and environmental education, and enforcing existing drive laws and speed limits.

## Key Action Steps

The success of this Plan depends on its implementation. The newly created Active Transportation Advisory Committee (ATAC) would be entrusted with overseeing the implementation of the Plan with assistance from Town Staff and participation by the stakeholders. The ATAC would be responsible for meeting regularly to receive updates and guide progress on the action steps. It would also author the annual progress update submitted to the Board of Commissioners on multimodal conditions in Aberdeen. The key action steps for accomplishing the goals and objectives of this Plan are summarized on the following page.

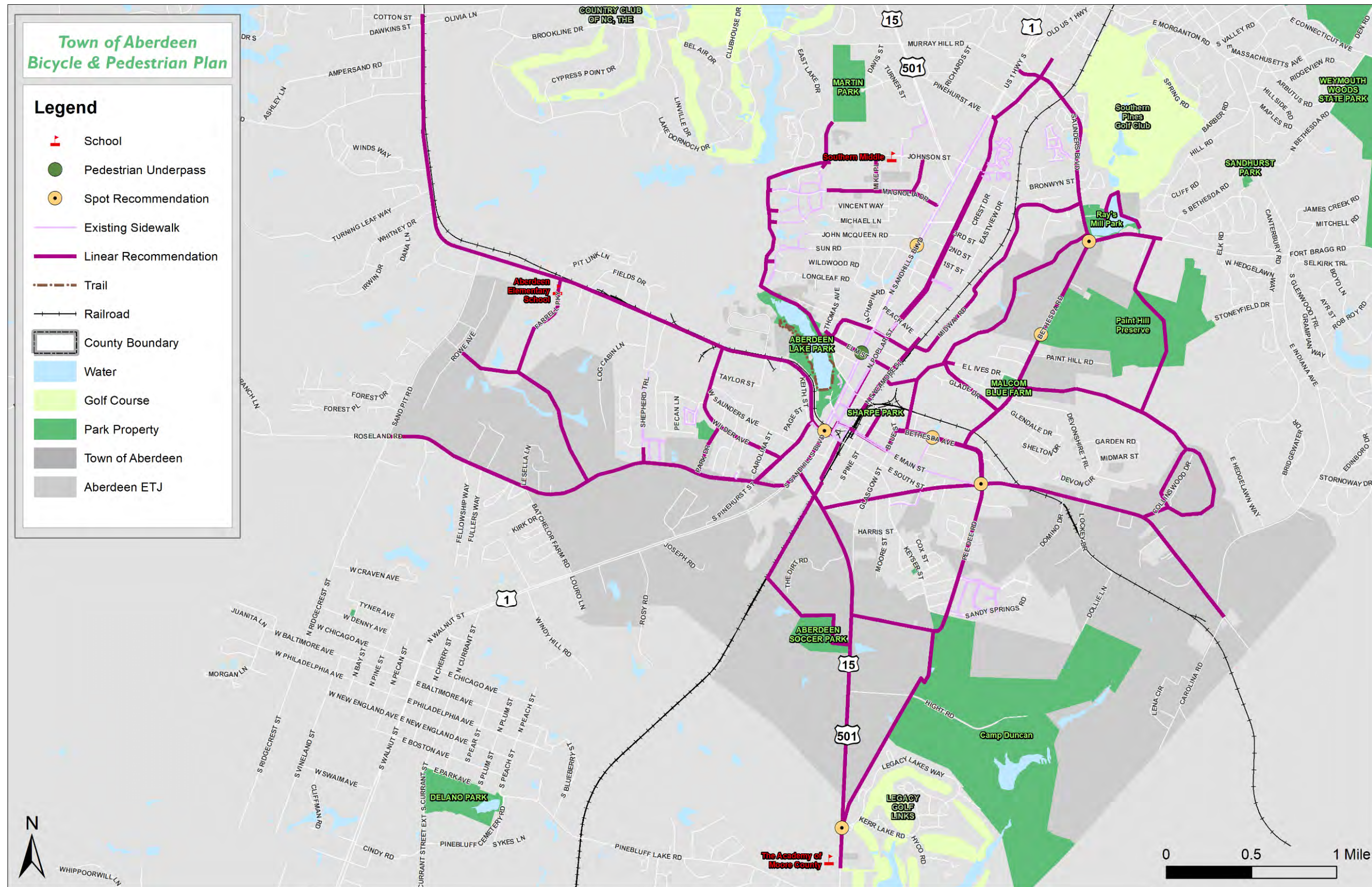
*Table ES-2. Key Steps to Implementation*

Action	Description	Stakeholder	Timeline
Adopt the Aberdeen Comprehensive Bicycle and Pedestrian Plan	Present the Plan to the Aberdeen Board of Commissioners for adoption.	Board of Commissioners and Town Staff	Summer 2022
Amend Moore County CTP	Amend Moore County Comprehensive Transportation Plan (CTP) to incorporate recommended projects from this plan into the CTP.	Board of Commissioners, Town Staff, Moore County	Summer 2022
Adopt a sidewalk overlay district	Adopt a sidewalk overlay district to require sidewalk infrastructure be built throughout the Town.	Board of Commissioners and Town Staff	Fall 2022
Create an Active Transportation Advisory Committee (ATAC)	Create a formal advisory committee that will be responsible for overseeing the implementation of the Plan.	Board of Commissioners and Town Staff	Winter 2023
Strengthen partnerships with Triangle Area Rural Planning Organization (TARPO) and NCDOT Division 8	Hold an initial meeting with the stakeholders to provide an overview of the Plan’s recommendations and identify opportunities for collaboration.	TARPO, NCDOT Division 8, and Town Staff	Winter 2023/ ongoing
Apply for Watch for Me NC	Apply to participate in NCDOT’s Watch for Me NC campaign to raise awareness and provide educational resources to promote bicycle and pedestrian safety to residents, drivers, and law enforcement.	ATAC and Town Staff	Winter/Spring 2023/ Ongoing



Action	Description	Stakeholder	Timeline
Identify potential funding sources during Town budget planning	Identify potential funding sources for pedestrian programs, projects, and maintenance in the Town’s budget. Begin to accumulate funds that can be used for the local match required for most projects.	ATAC, Board of Commissioners, and Town Staff	Winter/ Spring 2023
Apply for alternative funding sources for the Plan’s projects and programs	Refer to the funding sources identified in this Plan in Appendix D; apply for funds in addition to the STIP process to implement programs and projects. Establish a fund to use for local match requirements.	ATAC and Town Staff	Ongoing
Include requirements for bicycle and pedestrian facilities in Town ordinances and policies	Draft amendments to Town ordinances and policies following the recommendations of this Plan and NCDOT’s Complete Street Policy for active transportation infrastructure in existing and new development.	Board of Commissioners, and Town Staff	Spring/ Summer/ Fall 2023
Coordinate with Active Routes to School Coordinator	Begin meeting with the Active Routes to School Coordinator to establish and develop policy for implementation and/or training or programs for Aberdeen’s schools.	ATAC, Town Staff, NCDOT, NC Division of Public Health	Summer/ Fall 2023
Partner with local artists, businesses, and the parks department	Partner with local artists, businesses, and the parks department to work on placemaking projects.	Local artists, art organizations, and Town Staff	Winter 2023
Prepare the Aberdeen Comprehensive Bicycle and Pedestrian Plan Annual Report/Memo	Prepare the first Aberdeen Bicycle and Pedestrian Plan Annual Report or memo assessing progress made annually using the performance and evaluation measures included in this Plan.	ATAC and Town Staff	Spring 2024

Figure ES-1. Proposed Projects





# 1.0 Introduction and Project Overview

## 1.1 Background

The Town of Aberdeen is dedicated to improving its bicycle and pedestrian infrastructure through a comprehensive planning effort. With strong support from the Town and Triangle Area Rural Planning Organization (TARPO), the area is primed for active transportation improvements. The focus of the Bicycle and Pedestrian Plan (the Plan) is to define the vision and goals, outline recommendations, and identify programs and policies for implementing active transportation infrastructure and amenities that increase multimodal connectivity, safety, and improve the quality of life for its residents. The Plan is funded through a matching grant from the North Carolina Department of Transportation (NCDOT) Integration Mobility Division (IMD) with the Town of Aberdeen providing the matching funds. The grant provides funding for local governments to develop comprehensive transportation plans focused on active transportation infrastructure. Access the following link for additional information on the planning grants: <https://connect.ncdot.gov/municipalities/PlanningGrants/Pages/default.aspx>

### Town History

The Town of Aberdeen was incorporated in 1893 but settlers were in the area long before then. Highland Scots moved up the Cape Fear River valley inhabiting the Bethesda Community by the 1760s, growing corn and grain and hunting game and deer. A gristmill for grinding corn was built on Ray's Mill Creek and a community began to grow. This community became known as Blue's Crossing. By the 1850s, residents tapped pine trees for tar, pitch, and turpentine and the timber industry grew. These goods could be moved to market on the Raleigh & Augusta Railroad by the 1870s. Blue's Crossing became the name of the station where the railroad crossed Pee Dee Road.



The 1900s saw rapid change with a population surpassing 1,000 people, and the downtown district took form. There was a strong military presence in the Town during World War II with two United Service Organization (USO) offices. Rail and Federal Highway 1 supported transportation in the area and many soldiers were served at Camp Mackall. Highway 1 moved from the heart of the Town to bypass the center of town in the 1940s. The resulting new development included Moore County's first commercial shopping center in the early 1960s. The shopping center had a detrimental effect on downtown in that it drew businesses away from the core business district. The 1990s saw downtown's revitalization – an effort which continues today.

Today, the Town of Aberdeen is in southern Moore County, immediately south of Pinehurst and Southern Pines. The Town is also only a few miles west of the Fort Bragg Military Reservation, one of the largest military installations in the world, with around 54,000 military personnel. The Town is directly connected to US 1 and US 15/501 and is located approximately 38 miles northwest of Interstate 95. US 1 provides four-lane access to Raleigh, Durham, Cary, and the Research Triangle area, which are located approximately 60 miles to the north.

## 1.2 Community Vision

During the first Steering Committee meeting, a community vision was developed through an exercise in which committee members provided input on a sample community vision, with the intention of making it unique to the Town. Steering Committee members were provided comment forms to be completed anonymously and used in drafting the vision statement to the right. The vision applies to this Plan and the desired outcome for its implementation of bicycle and pedestrian projects, policies, and programs in the Town of Aberdeen.

### Vision Statement

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*The Town of Aberdeen will be a place where people of all ages and diverse backgrounds have access to bicycle and pedestrian facilities and programs that promote the following: alternative transportation modes, exercise and wellbeing, safety, connectivity, and celebration and discovery of Aberdeen's culture and history.*

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## 1.3 Goals and Objectives

A series of goals were developed by the Plan's Steering Committee throughout the planning process. These goals form the foundation of objectives and strategies that guide the creation and implementation of the Plan while also forming a strategic framework for developing and improving active transportation mobility in the Town of Aberdeen. In alignment with the North Carolina Statewide Bicycle and Pedestrian Plan, *WalkBikeNC*, these goals, objectives, and strategies were developed to further encourage consistency with key state and local active transportation initiatives and facilities.

### Goals of the Plan

- Provide multimodal transportation choices beyond vehicular transportation modes to the residents of the Town of Aberdeen.
- Improve mobility by creating and providing safe pedestrian and bicycle networks, removing barriers to walking and bicycling, and enhancing connections between community origins and destinations such as schools, stores, houses of worships, and other institutions.
- Improve safety for pedestrians and cyclists through strategic, consistent, and connected pedestrian and bicycle facility improvements, education, and enforcement strategies.
- Recognize the environmental and public health benefits of walking and biking by providing active living environments with safe, connected, accessible facilities along with programs that encourage walking and bicycling.
- Provide economic benefits by creating more attractive walkable and bikeable communities and savings to households associated with having access to low-cost, non-motorized transportation, and increased market access to local providers of goods and services.
- Educate the community on the benefits of pedestrian activity and applicable rules and regulations.

## 1.4 Purpose and Scope of the Plan

The purpose of this plan is to evaluate the existing bicycle and pedestrian conditions within the Town of Aberdeen and recommend programmatic and infrastructure projects to improve safety, connectivity, and well-being. This effort was led by NCDOT's IMD, AECOM as the project consultant, and the locally appointed Steering Committee. Public meetings were also conducted for Town residents to provide input on planning efforts. Engineering studies and construction were not included in the scope of this project.

The scope of the Plan included the following tasks:

- Analysis of existing conditions and demographics
- Review of existing plans and policies
- Policy and program recommendations
- Infrastructure improvements and cost estimates
- Identification of funding sources
- Public input through a Steering Committee and public meetings
- Implementation strategies

## 1.5 Benefits of a Walkable Community

There are many benefits of active transportation planning and the resulting programs and infrastructure projects. By working to develop walkable and bikeable communities, municipalities are investing in an increased sense of community through the promotion of improved health, economic resources and activity, sustainable transportation systems, and environmental consciousness. The Town of Aberdeen's *Comprehensive Land Development Plan* notes that the Town is addressing healthy community development through the adoption of and/or training regarding complete street policies; stormwater and floodplain management regulations; bicycle, pedestrian, hazard mitigation, and recreation plans; and sidewalk requirements for new developments.

Planning and developing active transportation facilities also creates a valuable resource for future generations to use and expand upon. *WalkBikeNC*, the statewide bicycle and pedestrian plan, established a vision for North Carolina centered around five key benefits: safety, health, economic, mobility, and stewardship. The statistics and benefits discussed in this section were compiled from several sources: the *WalkBikeNC* plan; the Pedestrian and Bicycle Information Center based at the University of North Carolina Highway Safety Research Center; the Center for Disease Control's (CDC) Nutrition, Physical Activity, and Obesity Report; and the North Carolina Pedestrian Crash Facts Summary Report by the NCDOT IMD.

## Health



Active transportation infrastructure such as sidewalks, shared-use paths, and trails promote active living and improve health by providing residents with opportunities to exercise and integrate physical activity into their daily lives. Programs such as Active Routes to School provide education and encouragement for more physical activity. Improving health is of critical importance in North Carolina where 35.6 percent of adults are overweight, and 34.0 percent of adults are obese according to data from the CDC. CDC data also shows that the percentage of North Carolina students in grades 9-12 who are obese jumped from 12.5% in 2013 to 16.4% in 2015 and has stayed above 15% since, showing an undesired positive trend in obesity rates. In 2019, 15.4% and 16% of students in grades 9-12 are classified as obese or overweight respectively. This indicates that the need to decrease these numbers and promote active and healthy lifestyles remains imperative in North Carolina.<sup>1</sup>

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<sup>1</sup> Center for Disease Control and Prevention (2019), Nutrition, Physical Activity, and Obesity: Data, Trends and Maps - North Carolina Category: Obesity / Weight Status. Retrieved from

## Economic Competitiveness



Investing in pedestrian infrastructure returns economic benefits to communities through increased property values, patronage of local businesses, and tourism. Improving transportation choices in a community encourages better connectivity between people and places and is closely tied to public health, access to jobs and resources, and business opportunities. Providing access to and connectivity between local businesses are important incentives for economic development, as convenient and appealing pedestrian and bicycle facilities can encourage the movement of people and increase their access to economic resources.

[https://nccd.cdc.gov/dnpao\\_dtm/rdPage.aspx?rdReport=DNPAO\\_DTM.ExploreByLocation&rdRequestForwarding=Form](https://nccd.cdc.gov/dnpao_dtm/rdPage.aspx?rdReport=DNPAO_DTM.ExploreByLocation&rdRequestForwarding=Form)

## Safety



The need to improve safety for pedestrians is urgent. Between 2010 and 2019, an average of 2,997 pedestrian crashes occurred across the state, annually, for a total of almost 30,000 pedestrian crashes. In the same timeframe, an average of 194 of these crashes caused fatal injury per year and an average of 227 of these crashes likely caused serious injury per year. With 59 pedestrian crashes leading to four fatalities and an additional five bicycle crashes (with no fatalities) in the Town of Aberdeen between 2010 and 2019, pedestrian safety is a major concern that must be addressed through greater protections for multimodal travelers.<sup>2</sup>

## Mobility



Mobility describes the effectiveness of the transportation system, which includes roads, rail, public transit, and bicycle or bicycle facilities, to move people and goods safely and quickly. As roads become increasingly congested, one way that communities can improve transportation efficiency is by offering active transportation alternative to automobiles and designing 'Complete Streets' that accommodate all modes of transportation. Providing the most appropriate types of transportation facilities can also improve transportation efficiency. In areas with multiple resources within proximity of one another, providing active transportation facilities can reduce the number of short motor vehicle trips.

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<sup>2</sup>North Carolina Bicycle and Pedestrian Crash Data Tool



## Sustainability



Nationally, transportation is responsible for nearly 80 percent of carbon dioxide and 55 percent of nitrogen oxide emissions (US Pedestrian and Bicycle Information Center, 2015). Active transportation infrastructure encourages stewardship of our natural resources by providing residents with a fossil fuel-free mode of transportation. Results of facilitating and encouraging bicycling and walking as a standard mode of transportation include the following: fostering an appreciation for nature and protecting natural resources, reducing fossil fuel consumption and vehicle emissions, and encouraging overall energy conservation and land use planning that promotes diverse modes of transport and mix of land uses.

While reducing vehicle miles travelled in general yields environmental benefits, shorter trips are more polluting than long trips on a per-mile basis. This is due to the high levels of emissions caused by "cold starts" and the first few minutes of travel before pollution control devices work effectively. Therefore, consolidating the number of vehicle trips is an important environmental goal (US Pedestrian and Bicycle Information Center, 2015).

## Quality of Life



Quality of life is influenced by factors that include but are not limited to the following: commute options, access to recreation including parks and trails, safety, and economic competitiveness. Bicycle and pedestrian amenities positively contribute to the overall quality of life of a community as such amenities encourage residents and visitors to be active, social, and enjoy more travel choices.

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## 2.0 Existing Conditions

### 2.1 Demographics

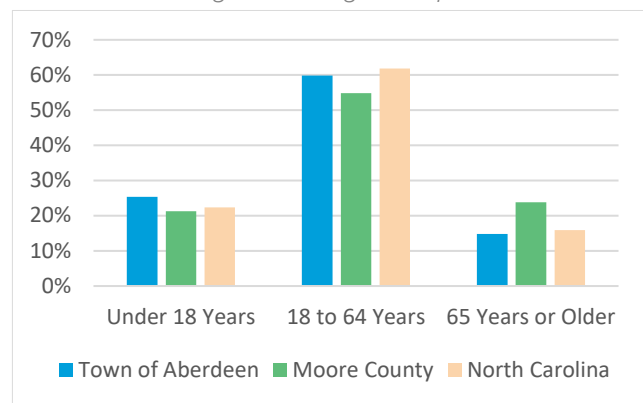
Title VI of the Civil Rights Act of 1964 requires that each federal agency ensure that no person is excluded, denied, or discriminated based on race, color, national origin, age, sex, or disability. Executive Order 12898, signed by President Bill Clinton in 1994, requires that each federal agency make achieving environmental justice part of its mission. This is relevant to the Town since they would be required to coordinate with federal agencies and apply for federal funds to implement the programs and projects recommended by this Plan.

Datasets studied include the following: population, age, race characteristics, Hispanic/Latino and minority populations, poverty rates, limited English proficiency (LEP) populations, and zero car households. The demographic analysis was based on 2010 and 2020 US Decennial Census data and 2015-2019 American Community Survey (ACS) 5-Year estimate data analyzed at the place, county, and state levels. All data is based on the US Census Bureau unless noted otherwise.

#### Population and Age

Based on US Census data, the population of the Town in 2010 was 6,350 and grew to 8,516 in 2020, an increase of 34.1 percent (3.0 percent annualized). Moore County's population was 88,247 people in 2010 and grew to 99,727 people in 2020, an increase of 13.0 percent (3.5 percent annualized). By comparison, North Carolina grew by 9.4 percent (0.9 percent annualized) between 2010 and 2020. A continuous dedication to quality-of-life benefits, such as active transportation infrastructure, may help attract both people and business to the area.

Figure 2-1. Age Groups



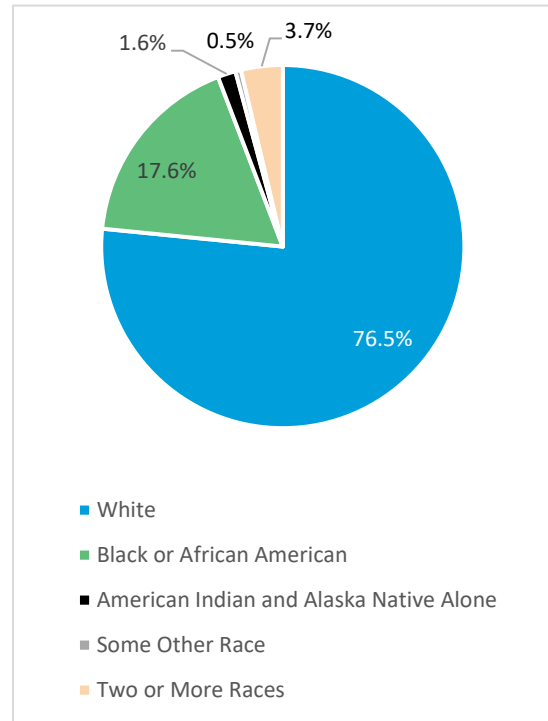
Based on 2015-2019 ACS data, the median age is 34.4 in the Town of Aberdeen, while Moore County is older with a median age of 44.3. The state's median age is 38.7 (see Figure 2-1). This data suggests that Aberdeen has a large proportion of working-age individuals. Improved multimodal infrastructure can help to retain or attract a more diverse population, while also serving the current population in the Town who may be interested in different modes of transportation. The residents living in the community currently can gain health benefits from active transportation facilities, while also benefitting from a greater quality of life.

## Race and Ethnicity

The minority population<sup>3</sup> in the Town of Aberdeen is approximately 28.9 percent of the total population. The minority population for Moore County is slightly lower at 22.9 percent.

The Town is predominantly white (76.5 percent), with a small percentage of Black/African American (17.6 percent), American Indian and Alaska Native Alone (1.6 percent), some other race (0.5 percent), and two or more races (3.7 percent) (see Figure 2-2. Racial Composition of Aberdeen). In Moore County, the demographic composition is predominantly white (82.2 percent) with a lower Black/African American (12.4 percent) population. The remainder of its population is defined as American Indian/Alaska Native (0.8 percent), Asian (1.3 percent), Native Hawaiian/Pacific Islander (0.1 percent), some other race (1.4 percent), and two or more races (1.8 percent). In the state of North Carolina, the white (68.7 percent) and Black/African American (21.4 percent) populations define the majority with the remainder of the population defined as American Indian (1.2 percent), Asian (2.9 percent), Hawaiian/Pacific Islander (0.1 percent), some other race (3.1 percent), or two or more races (2.7 percent).

Figure 2-2. Racial Composition of Aberdeen



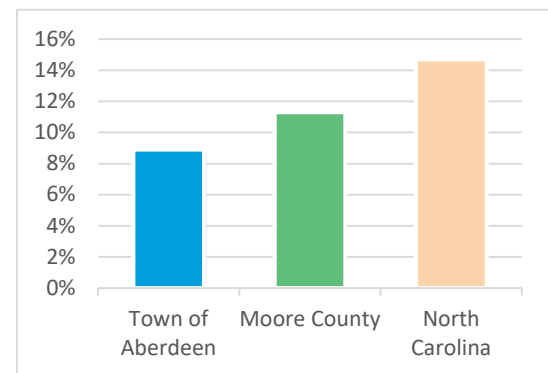
## Regional Poverty Rates

Individuals living below the poverty line in the Town of Aberdeen comprise approximately 8.9 percent of the population. This is lower than both the County rate at 11.3 percent and the state's rate of 14.7 percent (see Figure 2-3).

## Limited English Proficiency

The population in the Town of Aberdeen that speak English "less than very well" comprise approximately 1.8 percent of adult individuals age 18 and older. Of those in this category, the predominant language spoken other than English is Spanish (1.6 percent of the adult population over 18 years of age). In Moore County, LEP populations are approximately 1.9 percent. Of those that speak English "less than very well," Spanish is also the predominant language making up 1.9 percent of the adult population over 18 years of age.

Figure 2-3. Poverty Rate Percentages

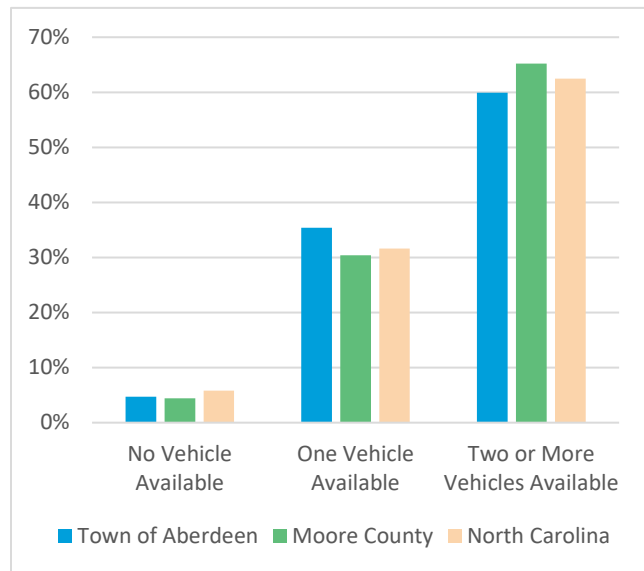


<sup>3</sup> Calculated by subtracting White, Non-Hispanic population totals from the Total Population based on 2015-2019 ACS data.

## Vehicles per Household

In the Town of Aberdeen, 4.7 percent of households have no vehicle available, 35.4 percent of households have one vehicle available, and 59.9 percent of households have two or more vehicles available. In Moore County, 4.4 percent of households have no vehicle available, 30.4 percent of households have one vehicle available, and 65.2 percent of households have two or more vehicles available. Statewide, 5.8 percent of households have no vehicle available, 31.6 percent of households have one vehicle available, and 62.5 percent of households have two or more vehicles available (see Figure 2-4). Active transportation infrastructure projects would particularly benefit residents that do not have access to vehicles or share vehicles within a household.

Figure 2-4. Vehicles per Household



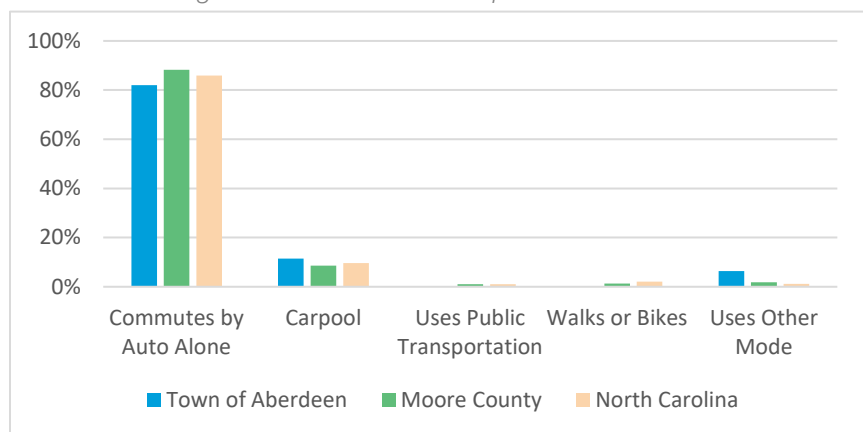
## Means of Transportation to Work<sup>4</sup>

An overwhelming majority of the Town's residents (82.0 percent) commute alone to work using a car. Approximately 11.5 percent of residents commute by carpool, while none of the population uses public transportation. Roughly 0.1 percent of residents commute by bicycling or walking and 6.4 percent commute by another mode. The Town's average travel time to work is 22.4 minutes.

These figures are comparable to Moore County and the state of North Carolina, where 88.3 percent and 85.9 percent commute alone by auto, respectively. In Moore County, 8.6 percent of workers carpool, while 9.7 percent of the state uses a similar mode of transportation. In the county, 0.1 percent of the population uses public transportation, 1.3 percent commutes by bike or walking, and 1.8 percent uses another mode to commute. Statewide, 1.1 percent of the population uses public transportation, 2.1 percent walks or bikes to work, and 1.2 percent uses another mode to commute. The mean commute time for both the county and the state is approximately 25 minutes.

These statistics show a higher dependency on vehicle usage in the Town, which aligns with the county and statewide figures (see Figure 2-5). Supporting the development and use of transportation networks for active modes may provide an opportunity for a variety of commuting options to work, as well as enabling workforce participation by people with limited access to vehicles.

Figure 2-5. Means of Transportation to Work



<sup>4</sup> NCDOT Demographic Snapshot Tool, 2021

## 2.2 Local and Regional Planning

The Town of Aberdeen has multiple plans and guidebooks that outline the importance the Town places on the development of an active transportation network.

### Town of Aberdeen Pedestrian Transportation Plan (2011)

The Town of Aberdeen completed its first pedestrian plan in 2011 through a NCDOT grant. The Steering Committee for this plan identified the following 13 priority projects across the Town:

- Aberdeen Lake Park to Downtown (US 1 crossing)
- Aberdeen Creek Trails
- Poplar Street Sidewalk (this will be constructed as part of EB-6001 discussed in Section 2.3)
- Johnson Street Sidewalk (this will be constructed as part of EB-5869 discussed in Section 2.3)
- Greenway to Rays Mill Pond
- Downtown to Malcom Blue Farm Greenway
- Maple Street Improvements
- Aberdeen Elementary Entrance
- US 15-501 Improvements
- US 1 Sidewalk and Crossings (this will be constructed as part of EB-5741 and U-5815 discussed in Section 2.3)
- South Street Improvements
- Downtown Railroad Crossing Improvements
- South Street Improvements
- Downtown Railroad Crossing Improvements
- Elm Street Sidewalk

Additionally, the plan recommends new development requirements for sidewalks and greenways stating that roadway projects should consider pedestrian infrastructure, downtown enhancements should include pedestrian amenities and aesthetic improvements, and regional greenways should be connected to improve transportation between adjacent communities.

### Town of Aberdeen Bicycle Transportation Plan (2012)

In 2012 the Town of Aberdeen developed a Bicycle Transportation Plan to build upon the Pedestrian Plan that was completed in the previous year. The plan recommends a variety of project types including bike lanes, shared-use paths, wide-paved shoulders, sharrows, and bicycle parking. The plan includes recommendations for bike lanes largely along smaller, more local roadways such as Poplar Street and South Street while paved shoulders and shared-use paths tend to be recommended along the larger roadways that connect the surrounding residential areas to the downtown such as NC 211 and Pee Dee/Bethesda Avenue. On some roadways, such as NC 5 and Bethesda Road, the recommended improvements include both a paved shoulder and an adjacent greenway. The plan also recommends that the Town adopt programs such as Safe Routes to School and make efforts to improve and enforce bicycle-related regulations.

### Town of Aberdeen Development Guide

*The Town of Aberdeen's Development Guide* provides street construction standards that include sidewalk specifications. According to the guide, sidewalks must be at least 5-feet in width and are required on both sides of the designed street. Additionally, streets must be designed to include a bicycle lane in each direction that is, at a minimum, 4-feet in width.

## Town of Aberdeen Downtown Streetscape Master Plan (2017)

According to this plan, the adaptive reuse of structures and the rediscovery of historic features and pedestrian friendly design that built the downtown initially can improve the Town again. One goal of the plan is to create a safer and more pleasant pedestrian environment, with a focus on wide sidewalks, trees, and streetlights. The plan also recommends improvements for downtown art and culture installations, streetscape furnishings, lighting, wayfinding, street, and sidewalk improvements, and spot improvement projects.

## Moore County Comprehensive Transportation Plan (2020)

The *Moore County Comprehensive Transportation Plan* (CTP) is a long-range, multimodal transportation plan that covers transportation needs through 2040. This plan includes recommendations for highway, public transportation, rail, bicycle, and pedestrian projects. The plan recommends various bicycle infrastructure projects including bike lanes on various streets including Pee Dee Road, Bethesda Avenue, and Saunders Avenue. Shared-use paths are proposed along streets including Poplar Street, Bethesda Road, and NC 5. The plan also recommends sidewalks along Pee Dee Road, NC 5, Keyser Street, along with various other roadways. The existing sidewalk along US 1 is identified as existing infrastructure in need of improvement.

## TARPO Bicycle and Pedestrian Planning Framework (2015)

The *TARPO Bicycle and Pedestrian Planning Framework* was developed to compile the information available in existing plans and update/correct components where needed. The goal of the document is to plan robust bicycle and pedestrian infrastructure that is safe and accessible for all users by including bicycle and pedestrian projects as a part of roadway projects and increasing the funding that is available to construct bicycle and pedestrian infrastructure.

The framework covers a larger geographic area but there are multiple projects identified within the Town of Aberdeen. These include but are not limited to:

- Aberdeen Creek Greenway Trails connecting to schools and neighborhoods
- Mid-block crossing/HAWK on US 1 at Aberdeen Lake Park with path/sidewalk connection to Poplar Street
- Sidewalk on west side of Poplar Street from Johnson Street to Peach Street
- Shared-use path on Poplar Street from Johnson Street to Peach Street

## Comprehensive Land Development Plan (2019)

According to the *Aberdeen Comprehensive Land Development Plan* (2019), the Town focuses on preserving its residential land use which accounts for 46.3 percent of the area within the total planning jurisdiction. It is noted that vacant land accounts for 38 percent of the total planning jurisdiction. Both figures are slightly higher than those found in other communities. Planning for future land use takes the following variables into account:

- Existing land use patterns and infill
- Elimination of conflicting land uses
- Regulation of multi-family
- Protection of existing residential areas



- Deterrents to growth in areas such as floodplains and environmentally sensitive lands
- Stimulants to development such as the present and future locations of roads and water and sewer lines
- Preservation of man-made and natural assets such as historic districts and significant community assets
- Preservation of the central business district
- Prohibition of strip development

## Zoning

The zoning codes for the Town of Aberdeen are displayed in Figure 2-6. Most of the Town is zoned for residential uses. Business, commercial, and industrial uses surround the primary corridors throughout the Town. A small section of the Town, largely between S Sandhills Boulevard and the railroad tracks in the center of town, is zoned as Central Business. The Aberdeen Development Ordinance specifies that the Central Business District is intended to encourage a mixed-use urban form that promotes a strong pedestrian-oriented environment (with a reduced need for parking).

Figure 2-6. Town of Aberdeen Official Zoning Map (Effective January 2020)

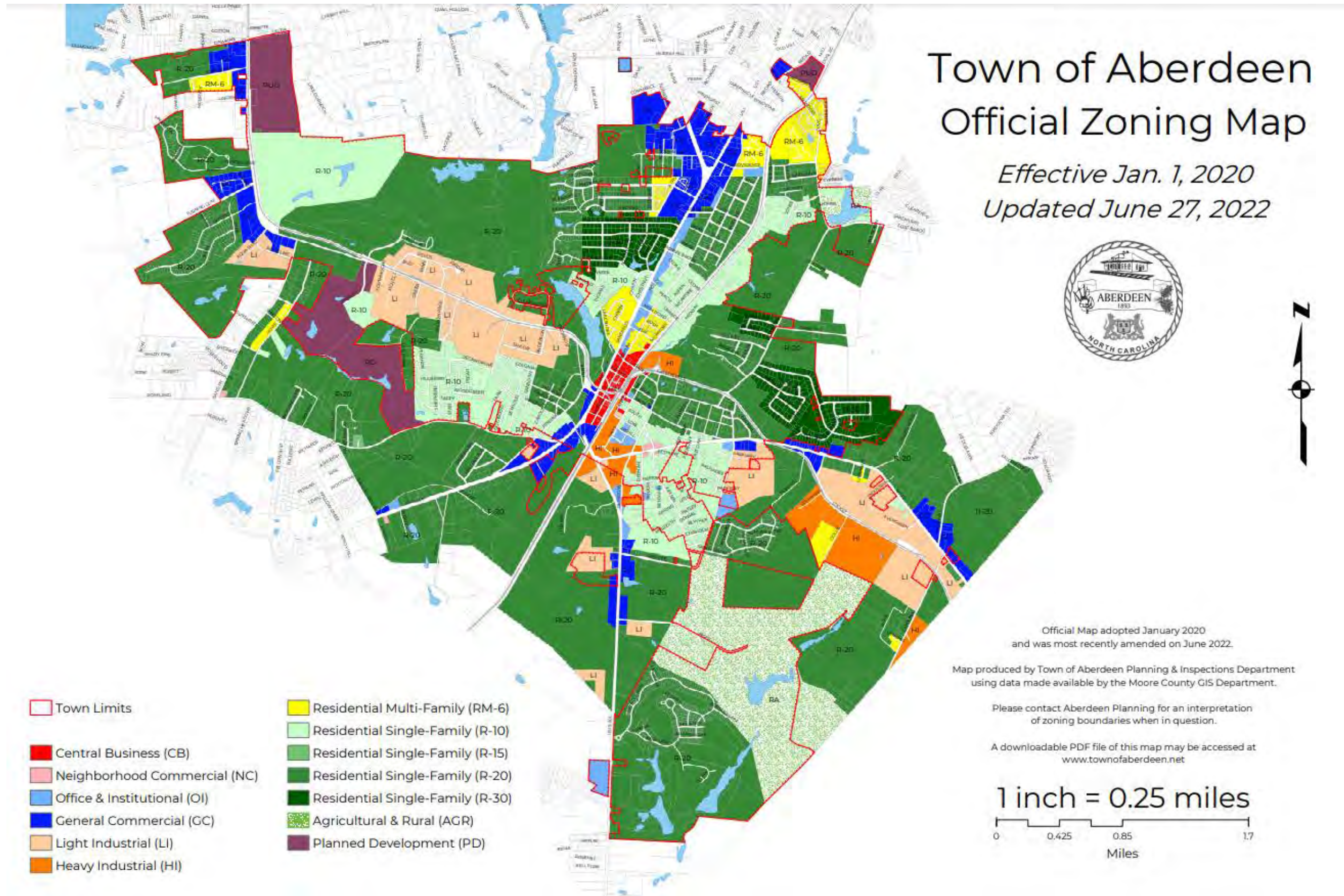
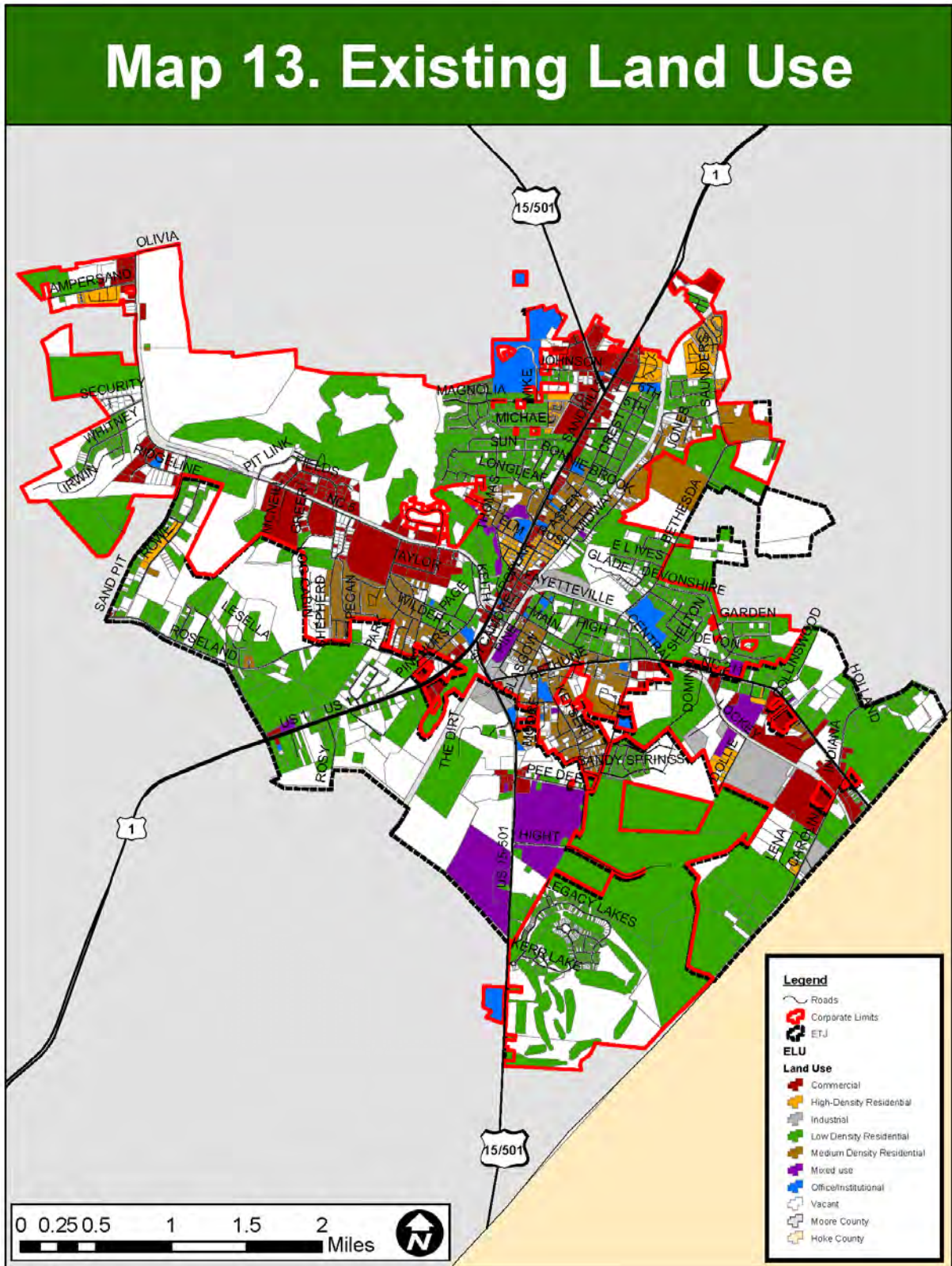




Figure 2-7. Town of Aberdeen Existing Land Use Map





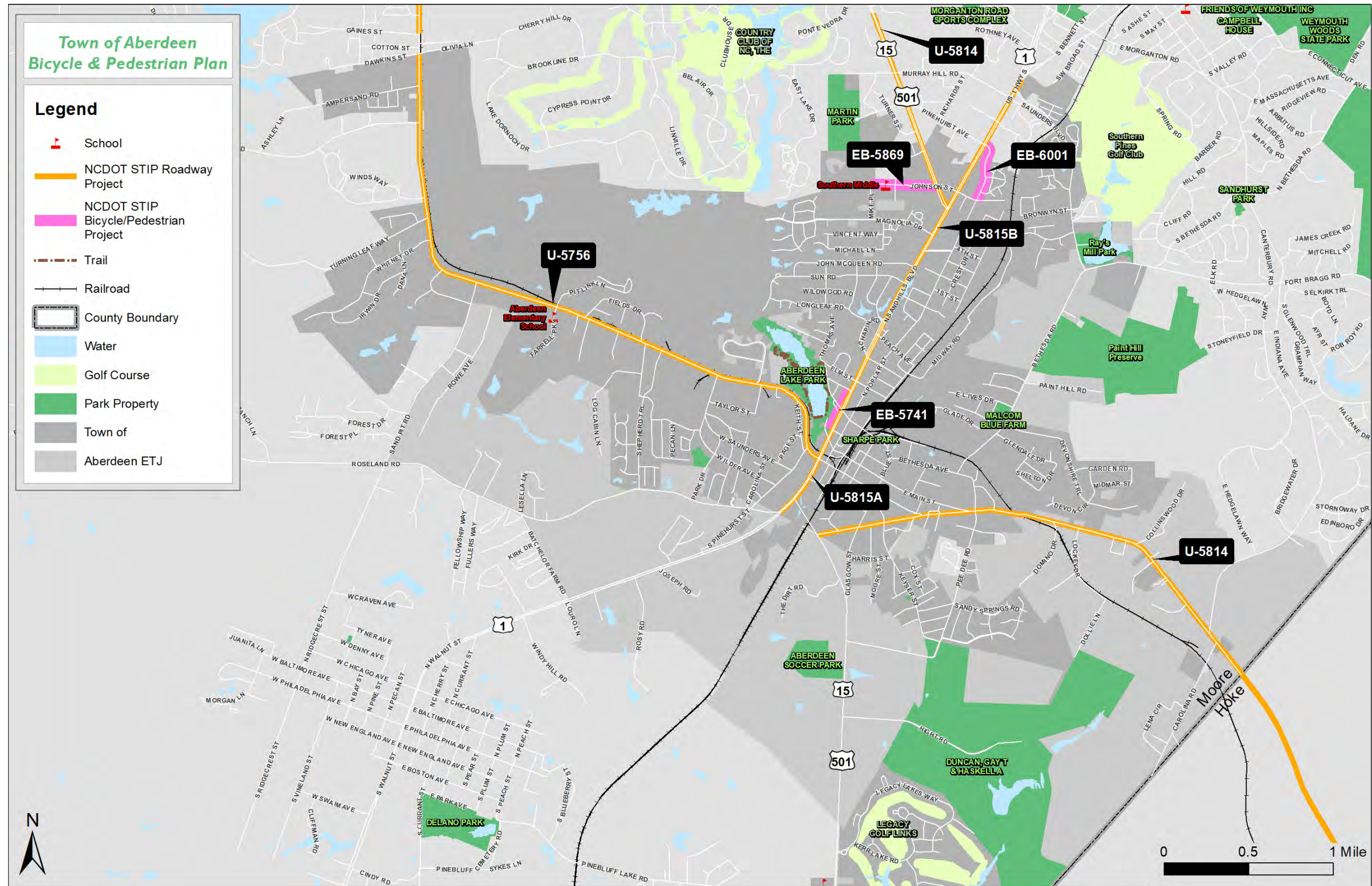
## 2.3 Programmed Projects

There are several programmed NCDOT State Transportation Improvement Program (STIP) projects in Aberdeen, including both roadway projects and pedestrian (sidewalk) projects. These projects are discussed below and shown on Figure 2-9 on the following page.

- **EB-6001** will construct sidewalks on one side of Poplar Street from US 1 to the intersection of Johnson Street/Providence Place. EB-6001 is expected to be constructed in 2025.
- **EB-5741** will provide pedestrian crossing accommodations of US1/15/501 at Maple Avenue. This project will be in conjunction with but separate from U-5815 (discussed to the right) and is expected to be constructed in 2023.
- **EB-5869** will construct sidewalk on the north side of Johnson Street from US 15/501 to Mikes Place. Construction is expected to begin in 2022.
- **U-5756** is a roadway project that will upgrade NC 5 from US 15-501 to the intersection of Trotter Drive/Blake Boulevard at the town limits. Conceptual designs for the project include sidewalk on the south/west side along the entire length of the project. The project is expected to be constructed in 2024.
- **U-5814** will convert US 15/501 to a synchronized street from US 1 to Brucewood Road. The project includes sidewalks on both sides of US15/501 for the entire length, and crosswalks at several locations along the project.
- **U-5815A** will convert US 1/15/501 to a synchronized street from Roseland Road to Knight Street. This project is expected to be constructed in 2027.
- **U-5815B** continues improvements to US 1/15/501 north to Old US 1 in Southern Pines. Pedestrian improvements for this project will be addressed later in the design process. U-5815B will be constructed in 2027.
- **R-5709** will widen NC 5 to multiple lanes from US 15/501 east into Hoke County. Sidewalks will be included on the north side of the project, with crossing locations to be determined later in the design process.



Figure 2-9. Programmed NCDOT STIP Projects





## 2.4 Community Features

The Town of Aberdeen has several community features that provide important services and enrich the quality of life for its residents. These features serve as potential bicycle and pedestrian origins and destinations. The Steering Committee voiced support for bicycle and pedestrian access to parks and recreation facilities in the Town, and in the surrounding towns. By improving connectivity between these locations and the Town's neighborhoods, residents would be more likely to bicycle and walk. All community features identified by the Steering Committee are listed in Table 2-1 and mapped on Figure 2-10.

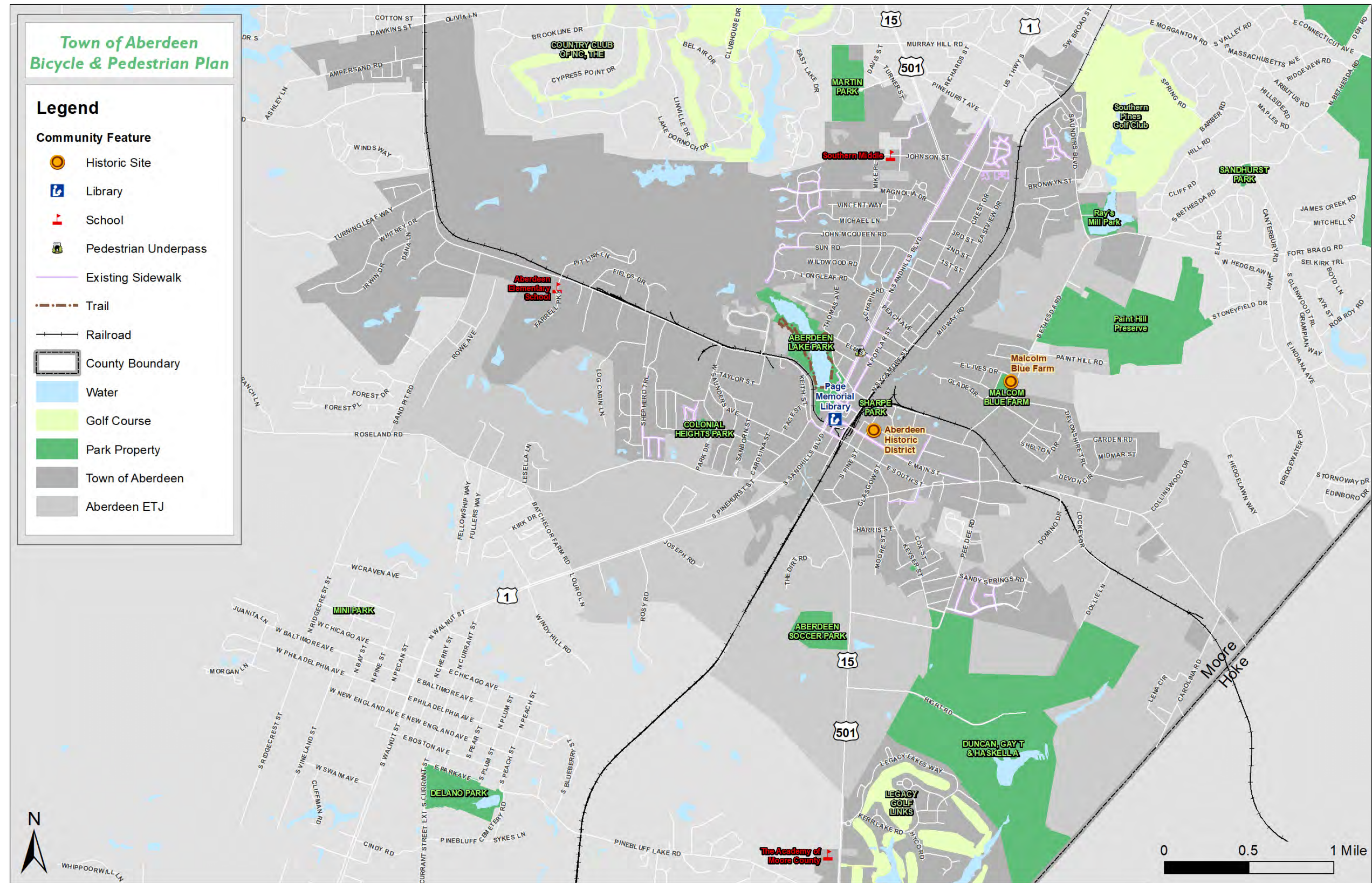


Table 2-1. Key Community Features

Number	Name	Type
1	Downtown Aberdeen	Civic/Business
2	Malcolm Blue Farm	Civic/Recreational
3	Aberdeen Elementary School	School
4	Southern Middle	School
5	The Academy of Moore County	School
6	Aberdeen Lake Park	Recreational
7	Martin Park (Southern Pines)	Recreational



Figure 2-10. Key Community Features





## 2.5 Infrastructure

The Town of Aberdeen is in Moore County, immediately south of Pinehurst and Southern Pines. The Town is also only a few miles west of the Fort Bragg Military Reservation, one of the largest military installations in the world, with around 54,000 military personnel. The Town is directly connected to US 1 and US 15/501 and is located approximately 38 miles northwest of Interstate 95. US 1 provides four-lane access to Raleigh, Durham, Cary, and the Research Triangle area, which are located approximately 60 miles to the north.



### Roads

The road network in the Town of Aberdeen represents the Town's growth and expansion from a railroad town to a town shaped by agriculture, industry, tourism, and retirement. In the area of downtown Aberdeen, which is the oldest part of the Town, streets are oriented around the CSX and Aberdeen & Rockfish railroad lines. As the Town grew to the north and to the west of US 1, the street pattern followed a more traditional suburban pattern, with neighborhood streets and cul-de-sacs. Currently there are 109.2 miles of roadway in the Town, with 65.4 miles belonging to the Town, and 43.8 miles being NCDOT maintained. The Town maintains most of the neighborhood streets, while NCDOT maintained roadways include US 15/501, US 1, NC 5, and NC 211 as well as Poplar Street and Bethesda Road.

The speed limits in the Town vary between 20 mph in residential areas to 55 mph on US 1 and other state highways. Rights-of-way were cited in this plan were estimated using aerial photography and Moore County parcel data. These estimates would need to be verified during the feasibility and engineering phases of future projects.

### Railroads

There are two active railroads in the Town that are operated by several different companies. CSX operates a rail line that runs north to south paralleling US 1 from Sanford to Hamlet. The Aberdeen & Rockfish Railroad Company and the Aberdeen Carolina & Western Railway Company also operate on tracks that run east to west, roughly paralleling NC 211 and NC 5 through town. Both railroads are active, and there is a small rail yard associated with the Aberdeen & Rockfish Railroad Company in the vicinity of Maple Avenue and Fayetteville Street.

There are several at grade railroad crossings in the Town of Aberdeen:

- |  |                      |                    |
|--|----------------------|--------------------|
| ▪ US 1, just north of the NC 5/W South Street intersection | ▪ NC 5 (Main Street) | ▪ Arnette Street   |
| ▪ NC 211, east of Central Drive                            | ▪ South Street       | ▪ Pit Link Lane    |
| ▪ NC 5, just to the west of Saunders Avenue                | ▪ S Sycamore Street  | ▪ Fields Drive     |
| ▪ NC 5 at Anderson Street                                  | ▪ S Poplar Street    | ▪ E Maple Avenue   |
|  | ▪ Bethesda Road      | ▪ Clearwater Drive |
|  | ▪ Midway Road        | ▪ Anderson Street  |
|  | ▪ Olivia Lane        |                    |

In addition, US 15/501 is bridged over the CSX rail lines south of downtown, and Saunders Street is bridged over the CSX rail lines north of downtown.

## Public Transportation

The Town of Aberdeen does not offer public transportation. However, Moore County offers public transportation via a deviated route called the A-Pines Line in the Southern Pines and Aberdeen area. In Aberdeen, the A-Pines Line makes scheduled stops at the Aberdeen Commons shopping center on US 15/501 and at the Town and Country shopping center on US 1. While the route is fixed, residents within one mile of the route can have it deviate from the route for pickups. Although public transportation services are limited, as they expand, they will depend on a pedestrian network for transit riders to safely access transit stops. A connected pedestrian network would support future expansion in public transportation by providing safe access to transit stops on streets and sidewalks. Good pedestrian design should consider all users in facility planning. For example, if Moore County transit services were to have a single stop located within the Town, Americans with Disabilities Act (ADA) accommodations for wheelchair users should be incorporated in the design of a new sidewalk.<sup>5</sup>

## Utilities

Utilities are an important consideration for pedestrian planning. Moving or replacing existing utilities to make room for new pedestrian infrastructure can be costly and, in some cases, cost prohibitive. Table 2-2 lists where above-ground utilities become barriers to pedestrian improvements. Often, sidewalks and shared-use paths are located on the side of the road where utilities are not present. The exact location of utilities would need to be surveyed during the engineering phase of each project. Coordination would need to occur with utility providers before construction.

Table 2-2. Utilities

Utility	Provider	Location
Electricity	Duke Energy	Above and Below ground
Telephone/TV/Internet	Spectrum (Time Warner Cable-Charter) and ATMC (Atlantic Telephone Membership Cooperative)	Below ground
Water/Sewer	Moore County Public Utilities Department	Below ground

## 2.6 Existing Bicycle and Pedestrian Facilities

Although the Town of Aberdeen doesn't have an inventory of existing pedestrian facilities, data from the NCDOT Pedestrian and Bicycle Infrastructure Network (PBIN) shows that there are approximately 26 miles of sidewalk in the Town. While sidewalks are dispersed throughout the Town, most of the sidewalks are concentrated in the downtown area, in apartment communities on Poplar Street and Saunders Boulevard, and in the Glen Laurel neighborhood on Magnolia Drive.

There is a pedestrian underpass under US 1 at Elm Street connecting neighborhoods on the east side of US 1 to the former Aberdeen Elementary School. This is the only pedestrian crossing of US 1 in the Town, although future STIP projects discussed in Section 2.3 include crossing accommodations (specifically EB-5741) and future designs for U-5815 may include other crossings. There are several intersections along Poplar Street downtown that have brick pavers as crosswalks, however there are no pedestrian signals in the Town, and most intersections do not have pedestrian crosswalks.

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<sup>5</sup> FHWA, Pedestrian Safety Guide for Transit Agencies:  
[https://safety.fhwa.dot.gov/ped\\_bike/ped\\_transit/ped\\_transguide/ch3.cfm](https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/ch3.cfm)

Similarly, there are no dedicated bicycle facilities (such as bicycle lanes or pavement markings) in the Town. There is one NCDOT designated bicycle route, the Sandhills Sector, which connects Albemarle in the west to Bladen County, where it meets the NC 5 Cape Fear Run bicycle route. The Sandhills Sector route enters Aberdeen from the south along US 1 before turning east on US 15/501 and leaving town on the west side along NC 211. There is also a Moore County designated bicycle route, Tour de Moore, that enters the Town on S Pinehurst Street, following NC 5 (Main Street), Blue Street, Bethesda Avenue, and finally leaving town on the north side on Bethesda Road. Although the Sandhills Sector and Tour de Moore are designated bicycle routes, the Steering Committee noted that they are on high traffic and high-speed roads with little to no shoulder space and no bicycle accommodations whatsoever.

Based on input from the Steering Committee, the absence of pedestrian facilities is notable and creates a dangerous environment for multimodal travel in various locations. The schools are lacking pedestrian crossings for students walking from nearby neighborhoods. Additionally, there are many parks, recreational and natural areas in the Town that generate pedestrian activity but have no pedestrian facilities connecting to them and surrounding neighborhood streets. Existing facilities are shown in Figure 2-11.







## 2.7 Pedestrian and Vehicular Traffic Counts and Crash Data

Pedestrian and traffic counts were conducted using qualitative and quantitative methodology. While specific traffic counts and crash data were available for some roadways, input from the public and Steering Committee were also considered throughout the development of the Plan. No quantitative data was available for pedestrian activity, so local input was used to understand current walking patterns as well as perceived safety concerns throughout the Town.

### Pedestrian Activity

Steering Committee members noted that most of the bicycle and pedestrian activity occurs in and around downtown, and in neighborhoods around the Town. The trails around Aberdeen Lake Park also attract significant walkers and bicyclists, however US 1 acts as a significant barrier to safe, crosstown travel, thereby limiting access to Aberdeen Lake Park from the eastern part of town. Many streets in the Town are narrow, and cycling is considered dangerous. Lack of sidewalks and bicycle facilities also limit access to other community features in the Town such as Paint Hill Preserve and Malcolm Blue Farm.

### NCDOT Annual Average Daily Traffic Counts

NCDOT prepares Annual Average Daily Traffic (AADT) counts for state roads, which represent the daily traffic average over the year at specific points. These counts, in conjunction with field visits and discussions with residents, help identify high traffic areas that may pose safety concerns for pedestrians and bicyclists. Several roads within the Town have traffic counts available. The counts are listed for the most recent year available, 2019. US 1/15/501 has the highest traffic levels in the Town, with AADT's between 27,000 and 35,000. NC 5 also has traffic volumes of up to 12,000 AADT. Amongst local roads, traffic volumes are highest on Sand Pit Road (5,800 AADT) and Poplar Street (4,900 AADT).

### Crash Data

The NCDOT IMD in collaboration with local law enforcement departments developed a dataset for all reported crashes involving pedestrians and/or bicyclists within the state between the years of 2007 and 2018. According to this dataset, there have been 59 pedestrian crashes, four of which were fatal. All the fatalities occurred on US 1/15/501. Also, during this period, there were five vehicular crashes (with bicycle), none of which were fatal.

The Steering Committee also noted safety concerns regarding US 1/15/501, specifically the challenges associated with crossing a high-volume roadway. Steering Committee members also noted that a lack of sidewalks along Poplar Street north of Peach Avenue results in pedestrians using the street to walk. The intersection of Saunders Boulevard and Bethesda Road was also cited as being especially dangerous due to high vehicular speeds and lack of lighting.

## 2.8 Existing Active Transportation Programs

There are several existing programs within the Town of Aberdeen that promote and encourage walking. According to the *2011 Pedestrian Plan*, the Town of Aberdeen, with assistance from First Health, worked on a variety of pedestrian education and safety initiatives in the past. The Town of Aberdeen's Police Department has spoken to school children and civic groups about motorist and pedestrian safety. Traffic safety community service spots have also been developed for television. The Town has partnered with First Health for a Healthy Kids, Healthy Communities grant project. This partnership is identifying problems with the built environment that affect weight gain. At the time of this study, another ongoing initiative as

part of the Healthy Kids, Healthy Communities grant project, is a school program called Photo Voice in which children are considering pedestrian safety in and around their school environment.

## 2.9 Opportunities and Constraints

In partnership with the Steering Committee, opportunities for improving pedestrian mobility and safety were identified, as well as potential constraints to overcome to transform the Town into a community with more active transportation opportunities. The combination of the Town's small size and proximity of community features and resources create opportunities for developing bicycle and pedestrian infrastructure that will greatly improve connectivity within the Town. Constructing new bicycle and pedestrian facilities will enable residents and tourists to explore and experience the small-town charm of the Town of Aberdeen, while also providing economic benefits to local businesses.

### Opportunities

1. In coordinating with NCDOT, future phases of roadway designs could include additional sidewalk and crossing opportunities along corridors.
2. Strategically selected pedestrian infrastructure projects could significantly enhance the connectivity and walkability of the Town given that a few key roadways provide most of the connectivity for the Town and connect to smaller, lower trafficked streets that reach residential areas.
3. Utility easements may provide opportunities to connect the Town via greenways and other off-road facilities.
4. The proximity of local resources and shops provides the opportunity for the Town to be a "park once" community.
5. Ample recreational areas, and connectivity between them, provide key destinations primed for improved active transportation assets both within the Town and to regional assets.

### Constraints

1. The Town is bisected by US 1, a 5-lane, high volume road that has no pedestrian crossings through the entirety of the Town, limiting cross town connections.
2. A lack of existing active transportation infrastructure, particularly sidewalks. The existing active transportation infrastructure does not form a connected network and results in unsafe conditions for pedestrians.
3. Unsafe intersections for accessing key destinations and recreation facilities.
4. Existing infrastructure does not incorporate adaptation techniques that could mitigate impacts of potential, future flooding or weather events and green infrastructure and resiliency should be incorporated in future policies and infrastructure designs.
5. Right-of-way challenges increase engineering and construction costs of active transportation infrastructure.

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## 3.0 Public Involvement

### 3.1 Steering Committee

The Steering Committee that guided this Plan consists of stakeholders including representatives from the Town's planning staff, residents, local business owners, NCDOT, and TARPO to guide the Plan development.

The Steering Committee focused on incorporating a diverse range of community perspectives. The Steering Committee met three times throughout the planning process to help shape the Plan by identifying goals and objectives, identifying bicycle and pedestrian constraints and opportunities, and prioritizing proposed projects.



The first Steering Committee meeting took place on August 11, 2021, at the Town of Aberdeen Town Hall building. During this meeting, the group discussed issues the community is facing with regards to bicycle and pedestrian infrastructure. The committee broke into groups during a working session to define bicycle and pedestrian origins, destinations, areas of high activity, as well as areas of concern. The areas of concern were used to start thinking about potential projects, policies, or programs that could help enhance the overall bicycle and pedestrian experience within the Town. The Steering Committee discussed focusing on connectivity, safety, and implementable projects. In a post meeting survey, members focused on providing input on a vision and set of goals for the plan.

Table 3-1. Steering Committee Members

Steering Committee Members	
Amberly Glitz Weber	Heather McKeithen
Angela McKew	Janet Peele
Eli Schilling	Mollie Wilson
Daniel Benhke	Shekeeta McCrommon
Diane Innes	Thomas Blue
Farrah Newman	

The second Steering Committee meeting was held on October 6, 2021. Sample projects, policies, and programs were presented to the committee in preparation for a working session. The working session captured committee input on bicycle and pedestrian infrastructure projects, as well as relevant policies or programs. Specifically, focus was placed on linear facilities and spot improvements, connections and gaps in bicycle and pedestrian infrastructure, and amenities. The feedback gathered during this meeting was used to develop preliminary recommendations.

## 3.2 Public Meetings

The first public meeting was held on October 6, 2021, in the Town of Aberdeen Town Hall building, immediately following the second Steering Committee meeting. The consultant team presented a brief PowerPoint presentation to the public explaining the goals of the project. Following the presentation, the Steering Committee worked with the public in a mapping exercise where they marked up maps to indicate areas with high bicycle and pedestrian activity, areas of concern, and locations for potential projects.

The second public meeting was held on February 10, 2022, at the Town of Aberdeen Town Hall building. The purpose of the meeting was to provide an update of the project and engage with the public in a working session to review the revised projects in the Plan. During the work session, the public received a handout with projects categorized by type of project recommendation (i.e., sidewalks, shared-use paths, bicycle facilities, and spot projects).

The purpose of these meetings was to provide a brief presentation about the planning process and present highlights from the plan. Maps displaying the recommended projects were provided during these meetings. Meeting materials are provided in Appendix A: Public Involvement.

## 3.3 Community Survey

The public survey received 154 responses and was made available online at the Town's website between February 1, 2022, and April 5th, 2022. The purpose of the survey was to find out what makes it difficult to bike and walk and what enhancements or specific project recommendations could help improve active transportation within the Town. Key findings from the survey are outlined below. Survey results are found in Appendix B.

Respondents were asked where, and how frequently they bicycle and walk. Generally, survey respondents walk or bike for exercise (without a specific destination) most frequently, and most respondents indicated that they do not walk or bicycle at all. Follow-up questions reveal that they do not walk or bike due to a lack of pedestrian and bicycle infrastructure and unsafe conditions in the Town.

Survey respondents marked that the addition of new infrastructure is the top priority for supporting bicycling and walking in the Town. This represents unmet demand for bicycle and pedestrian facilities in the town, and support. In the survey, respondents were asked to prioritize the types of improvements they would like to see in the town. The top response was pedestrian infrastructure (such as sidewalk improvements or safer crosswalks) followed by bicycle infrastructure (such as bike lanes, shared bicycle marking on roadways, or wide paved shoulders). The improvement of shared-use trails in the Town was the third highest ranking.

Survey respondents were also asked about the location of unsafe roads and intersections. A sample of the responses are shown below.

### *Least safe roads and streets?*

*"I love the views running on Bethesda Rd and 211, but the lack of sidewalks and the speed of traffic makes it dangerous."*

*-Survey Respondent*

*"Roseland and highway 5 and highway 1 are both unsafe for bicyclists and pedestrians. Roseland although considered a bike route has lanes that are much too narrow for a cyclist to ride safely away from traffic and there are no sidewalks."*

*-Survey Respondent*

*"N Poplar is a wonderful street, and you can safely walk and bike from downtown to Peach St. Beyond that, it gets treacherous due to the lack of sidewalks, bike paths and lighting."*

*- Survey Respondent*

Respondents identified the least safe intersections throughout the Town. Select responses are provided below.

### *Least safe intersections?*

*"Highway 5 & 1-15-501 are dangerous for both modes of transportation. Nowhere for people to cross safely."*

*-Survey Respondent*

*"There are several intersections between downtown Aberdeen and the newly relocated park that are very difficult to traverse due to the railroad tracks and lack of sidewalks."*

*-Survey Respondent*

*"Johnson and Poplar have become very congested during the day since the new Thomas Tire was built. Also crossing N. Sandhills to Aberdeen Lake Park, and again across Poplar/Pinehurst Ave."*

*- Survey Respondent*

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## 4.0 Recommendations

Active transportation offers many benefits including improved health, reduced environmental impacts, and fewer financial commitments from decreased dependency on the automobile. This section describes the infrastructure improvements that are recommended to provide the Town of Aberdeen with a safe, accessible, and connected bicycle and pedestrian network. Chapter 4 proposes infrastructure and programmatic recommendations for achieving the goals and objectives of the Plan based on the review of existing conditions and public involvement.

Recommended improvements in this Plan include improving on-road bicycle facilities, sidewalk upgrades, and crossing improvements. Multi-use facilities (shared-use paths, also known as greenways) are recommended in some instances to improve the existing trail system, as well as provide active transportation options along existing high-volume roadways.

### 4.1 Facility Types

Various types of active transportation facilities that are considered for improving bicycle and pedestrian connectivity, access, comfort, and safety are provided below. Facility types fall into two main categories: spot improvements and linear improvements.

#### Spot Improvements

Spot improvements address bicycle and pedestrian challenges at specific locations, such as intersections, crossings, and short gaps in an active transportation network. These types of improvements are generally low-cost and provide enhancements through surface improvements, signing, access enhancements, or functional upgrades.

##### *High-Visibility Crosswalk*

A crosswalk is the portion of the roadway intended for pedestrians to use for crossing the street and is typically located at roadway intersections. It may be distinctly indicated for pedestrian crossing by lines or other markings on the surface. High-visibility crosswalks are marked with diagonal or longitudinal lines parallel to traffic flow, such as the ladder, continental or bar pair marking pattern.



##### *Mid-Block Crossing*

Midblock crossings are typically located on low-volume, low-speed roadways and provide a safe crossing option indicated by pavement markings and/or signs.



### *Rapid Flash Beacon*

Rapid flash beacons are pedestrian-activated devices used to warn and control traffic at an unsignalized location to assist pedestrians in crossing at a marked crosswalk or mid-block crossing.



### *Advance Yield Here Sign and Yield Line*

Advance Yield Here To (Stop Here For) Pedestrians signs are placed between 30 and 50 feet in advance of the marked crosswalk along with the stop line or "shark's teeth" yield line.



### *Traffic Calming Study*

Intended to increase visibility of pedestrians along a roadway, traffic calming studies investigate measures such as speed tables, share the road signage, stop signs, or neighborhood roundabouts that would help address vehicular speeds and provide safety for pedestrians.



### *Curb Ramp*

A curb ramp provides a combined ramp and landing to accomplish a change in level at a curb between the sidewalk and the street. This element provides a transitional access between elevations for pedestrians using wheelchairs, strollers, or other devices with wheels, and must comply with ADA standards.



### *Nature Based/Green Infrastructure (G.I.)*

Infrastructure that supports water management through protection, restoration, or mimics the natural water cycle. This may include use of existing healthy ecosystems such as existing floodplains, wetlands, or forests or manmade protections such as increased landscaping, permeable pavement, vegetated buffers berms, bioswales, rainwater collection, or retention ponds.



### *Wayfinding*

Wayfinding includes comprehensive signage and/or markings to guide travelers to their destinations along preferred routes. It is usually comprised of four types of signs that are informational (e.g., opening hours), directional (e.g., trail route information), identification (e.g., name of a park entrance), or regulatory (e.g., restricted areas).



## Lighting Improvements

Lighting improvements for active transportation typically includes street lighting such as light poles, lampposts, or streetlamps, or other raised source of light along a shared-use path or sidewalk. High-quality and well-placed lighting, including supplementing pedestrian-scale lighting at night-time crossing areas, increases safety and security for non-motorized and vehicular users. Dark sky lighting options should also be considered in response to sensitive natural areas and wildlife.

## Linear Improvements

Linear improvements address active transportation challenges along portions of a roadway such as sidewalks, or in some cases, as separate facilities from the roadway such as shared-use paths. These types of improvements are generally larger infrastructure projects with higher costs and longer implementation timeframes. Together, they form a network of safe transportation choices for the community.



### Sidewalks

Sidewalks are the portion of a roadway right-of-way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians. As the primary element of the pedestrian environment, sidewalks are generally constructed of concrete, pavers, or another hard surface. The Federal Highway Administration (FHWA) and Institute of Transportation Engineers (ITE) recommend a minimum width of five feet for a sidewalk (Pedestrian and Bicycle Information Center, n.d.).



### Share-Use Path

A paved shared-use path designed to meet ADA standards for use by active transportation users. The share-use path is separated from the roadway by an open space or a physical barrier, or within an independent-right-of-way.



### Bike Lanes

Bike lanes are a designated travel lane designed exclusively for bicyclists using pavement markings and signage. Bike lanes are located alongside standard travel lanes and typically flow in the same direction as motor vehicle traffic. Bike lanes provide separation that may be preferred by cyclists; however, cyclists are still permitted to ride in the general travel lane regardless of the presence of bike lanes.



### *Sharrows*

Shared Lane Markings, or “sharrows,” are roadway markings used to communicate that the lane is a shared environment for cyclists and motorists. A sharrow communicates the legality and legitimacy of a cyclist riding in the lane and may provide a positioning recommendation for cyclists. Sharrows do not change the right-of-way of a roadway facility as cyclists are permitted to ride on any public roadway aside from highways with full control of access.



### *Buffered and Protected Bike Facility*

Buffered bike facilities consist of a standard bike lane with the addition of a designated buffer space separating the bicycle lane from the adjacent travel or parking lanes, providing additional space for cyclists. The buffer may consist of pavement markings but is still a shared-use street. Protected bicycle lanes are separated from traffic lanes by physical barriers.

### *Wide Paved Shoulders*

Wide paved shoulders provide a space outside of the travel lanes that a cyclist may choose to ride if he or she wishes to ride separately from other traffic. This may result in more predictable riding behavior and increased comfort levels for cyclists and motorists. Space permitting, rumble strips may be placed between the travel lane and paved shoulder to provide greater protection for cyclists.

## Complete Streets

NCDOT adopted a “Complete Streets” policy (CS) in 2009 and it was updated in 2019. Complete Streets consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure. Complete Streets are designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists, and individuals of all ages and capabilities.<sup>6</sup> NCDOT has developed the P6.0 Complete Streets Project Sheet, which will require project submitters to note multimodal elements that are to be evaluated as a part of the proposed transportation project. If no multimodal facilities are to be evaluated with the proposed project, the sheet requires the project submitter to document why they are not to be evaluated.

Part of designing with CS principles in mind includes the impact of street patterns on trip length, connectivity between resources, intersection use, and the overall experience of the user. Both cyclists and pedestrians can benefit from a street that has been designed with the CS policy including improvements for children and individuals with accessibility needs, health advantages, improved public transportation services, economic revitalization, safety enhancements, roadway equity, and a more livable community.

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<sup>6</sup> NCDOT Complete Street Planning and Design Guidelines at <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>

## 4.2 Prioritization

Proposed projects were developed through Steering Committee and public input, as well as input from the Town. Proposed projects were vetted through the Steering Committee and public, and then prioritized using the methodology below. The prioritization results in this section are meant to serve as a general guide. There may likely be opportunities to implement these projects in an order different from the order in which they were prioritized. The prioritization in this Plan should generally be followed as it directly reflects Steering Committee input and community feedback captured during public meetings and an online survey. This should not, however, prevent the Town from taking advantage of pedestrian improvements as opportunities present themselves.

The National Cooperative Highway Research Program (NCHRP) Report 803: Pedestrian and Bicycle Transportation Along Existing Roads - ActiveTrans Priority (APT) Tool Guidebook (2015) was used as a methodology for prioritizing pedestrian projects in the Town. These projects were ranked by corridor, rather than by each individual linear and spot project (see section 4.1 Facility Types) using the APT provided spreadsheet. Prioritization scores for each corridor improvement were based on a set of seven factors, as prescribed in the APT methodology. These factors were custom selected for this Plan based on input from each of the Steering Committee members to best reflect the Town's community values and priorities. Weight factors were then applied to indicate the relative importance of different factors. A set of variables for each factor was then designated. Variables are characteristics of the roadways, neighborhoods, or other features related to the proposed project(s) that can be measured qualitatively or quantitatively. The traffic speed of a roadway, bicycle or pedestrian crashes, or results from a public input survey are all examples of measurable characteristics. After data was collected, assessed, and entered into the APT spreadsheet, variables were scaled (normalized along numeric scales). The resulting output is the calculation of priority score and rank for each individual project within the proposed corridor. Table 4-1, below, summarizes the factors, weight of factors, and variables used in the prioritization of projects.

These variables are then scaled, where a numerical value is assigned to the "yes" and "low" results. This is done so the variables can be more equitably compared across projects and variables. This information is then processed through a calculation of priority scores where the weight of that factor places either more or less importance in the overall calculation.

Table 4-1. Prioritization Methodology

Factors	Weight of Factors	Variables
Stakeholder Input	1	<ul style="list-style-type: none"> <li>• Number of requests (public outreach exercises)</li> <li>• Steering Committee and public comments</li> <li>• Public involvement ranking (public outreach exercise)</li> </ul>
Constraints	6	<ul style="list-style-type: none"> <li>• Available ROW</li> <li>• Utility relocation</li> <li>• Order of magnitude cost (based estimate)</li> </ul>
Safety	2	<ul style="list-style-type: none"> <li>• Public involvement (public outreach exercise)</li> <li>• Total bicycle/pedestrian crashes</li> </ul>
Existing Conditions	5	<ul style="list-style-type: none"> <li>• Posted speed limits</li> <li>• Presence of paved shoulders</li> <li>• Presence of sidewalks</li> </ul>
Demand	4	<ul style="list-style-type: none"> <li>• Proximity to community services</li> <li>• Public involvement (public outreach exercise)</li> </ul>
Connectivity	3	<ul style="list-style-type: none"> <li>• Connection to existing facility/facilities</li> <li>• Public involvement (public outreach exercise)</li> </ul>
Equity	7	<ul style="list-style-type: none"> <li>• Public involvement (public outreach exercise)</li> </ul>

Based on The National Cooperative Highway Research Program (NCHRP) Report 803: Pedestrian and Bicycle \_Transportation Along Existing Roads - ActiveTrans Priority (APT) Tool Guidebook (2015)

## Results

Projects were entered into the APT spreadsheet based on their project type – sidewalk, bicycle facilities, and shared use paths or greenways. The top scoring results of the prioritization process for each of the three categories of projects are shown below. The projects are organized by highest to lowest prioritization score and rank. This prioritization informs the organization of the recommendations in Section 4.4. A full listing of prioritized projects is included in Appendix C.

Figure 4-1. Prioritization Results

Map ID	Location	Prioritization Score	Project Type
3	Sidewalk/mixed use path on Saunders Blvd	75.0	Sidewalk
11	Elm St sidewalk extensions from Thomas Ave to Sycamore St.	75.0	Sidewalk
18	Sidewalk connector on Pee Dee Rd	75.0	Sidewalk
2	Mixed-use-path connector between Martin Park and proposed Lake Aberdeen Trail	66.0	Mixed-Use Path
4	Aberdeen Creek Trails	66.0	Mixed-Use Path
19	Mixed use path on 15/501	66.0	Mixed-Use Path
34	Pinehurst Street paved shoulders	58.0	Bicycle
6a	Pavement markings (sharrows) and share the road signage on Poplar Street	54.0	Bicycle



Map ID	Location	Prioritization Score	Project Type
10	Bicycle facility along Bethesda Rd from Bethesda Ave to Town limits	54.0	Bicycle

### 4.3 Cost Estimates

Costs for recommended pedestrian infrastructure projects were primarily estimated using NCDOT’s Bicycle and Pedestrian Cost Estimation (BPCE) Tool.<sup>7</sup> The Pedestrian and Bicycle Information Center (PBIC)’s report titled *Costs for Pedestrian and Bicyclist Infrastructure Improvements* and the capital costs from similar projects were used to estimate costs for project types not included in the BPCE tool.<sup>8</sup>

#### Data Sources

The BPCE tool was adopted in July 2019 to assist NCDOT divisions, Metropolitan Planning Organizations, and Rural Planning Organizations in developing reasonable and comparable bicycle and pedestrian cost estimates for submittal through the Prioritization 6.0 process. The PBIC report was published in October 2013 with over 1,700 cost figures from construction and engineering bids compiled nationwide to provide cost estimates for over 70 types of bicycle and pedestrian facilities. The report provides the average, median, high, and low-cost estimates for each item. The median estimate was used for the purposes of this Plan as the average estimate may be skewed by outliers.

#### Methodology

The BPCE tool was used to estimate costs for signage, crosswalks, lighting, signals, sidewalks, and shared-use paths. The PBIC report was used to estimate costs for curb radii reductions, traffic calming measures, and wayfinding signs. The costs reported in this Plan include design, permitting, utility relocation, and construction. The projects are anticipated to be implemented within existing right-of-way. The costs associated with any additional right-of-way needed for these projects are not included in these estimates.

Estimated costs were adjusted to 2020 dollars by using an annual inflation factor of 3.5 percent. BPCE tool costs were provided in 2019 dollars and PBIC estimates provided in 2013 dollars. The costs are approximate and subject to change based on the current price of materials and labor. They are dependent on the actual conditions which will be determined during the planning and engineering phases. The estimates provided are intended to serve as a relative guide for a rough order of cost magnitude.

Results for the cost estimates can be found in Section 4.4, after each proposed project. Infrastructure projects are recommended for the Town of Aberdeen to improve pedestrian safety, connectivity, and mobility. These projects contain various land uses, community assets, and roadway characteristics, taken together, the projects proposed within these planning corridors will tie together to encourage pedestrian connectivity throughout the Town. Project recommendations include improvements such as the installation of lighting, wayfinding, and pedestrian signage, as well as pavement markings, shared-use paths, and green infrastructure to treat and absorb stormwater. Curb ramps compliant with ADA are recommended at intersections and crossings, but due to scale, are not shown on the figures. The projects are organized by corridor and focus on addressing the needs and challenges of the Town’s top ranked

<sup>7</sup> [NCDOT Bicycle and Pedestrian Cost Estimation \(BPCE\) Tool](#)

<sup>8</sup> PBIC receives funding from FHWA and is part of the University of North Carolina Highway Safety Research Center.

projects. Pedestrian policies and programs are also recommended and are intended to work in tandem with these infrastructure projects, see Section 4.5.

#### *Assumptions and Disclaimers*

These estimates are intended for use as an aid to estimating project costs for pedestrian and active transportation projects associated with P6.0. This methodology should not be used to estimate projects of other modes (roadways or other). The tool contains estimations for design services, utilities, ROW, and construction with contingencies based on limited project knowledge and inputs. Due to the conceptual nature of project descriptors, the accuracy of cost estimates will be limited. More accurate cost estimates would result from an engineered feasibility study project. Estimated cost outputs are designed to assume federal transportation funding is used in compliance with all federal transportation regulations and FHWA-approved NCDOT Local Programs Management Office oversight requirements in place as of the date of this tool's publication.

## 4.4 Recommended Infrastructure Improvements

Figure 4-2 includes all the recommended facilities and improvements for the pedestrian network in the Town of Aberdeen. Recommended facilities include new sidewalks, dedicated bicycle facilities, trails/greenways, and spot projects such as intersection improvements. These projects were identified through consultation with the Steering Committee, public meetings, surveys, and through GIS analysis of existing sidewalk coverage and pedestrian crash data.

All proposed projects are intended to provide safe connections between origins and destinations within the Town while promoting exercise and mobility. The projects were developed through collaboration with the Steering Committee, field analysis, and public input. All pedestrian and bicycle facility recommendations along NCDOT maintained roadways will require coordination with NCDOT Highway Division 8 as part of implementation.

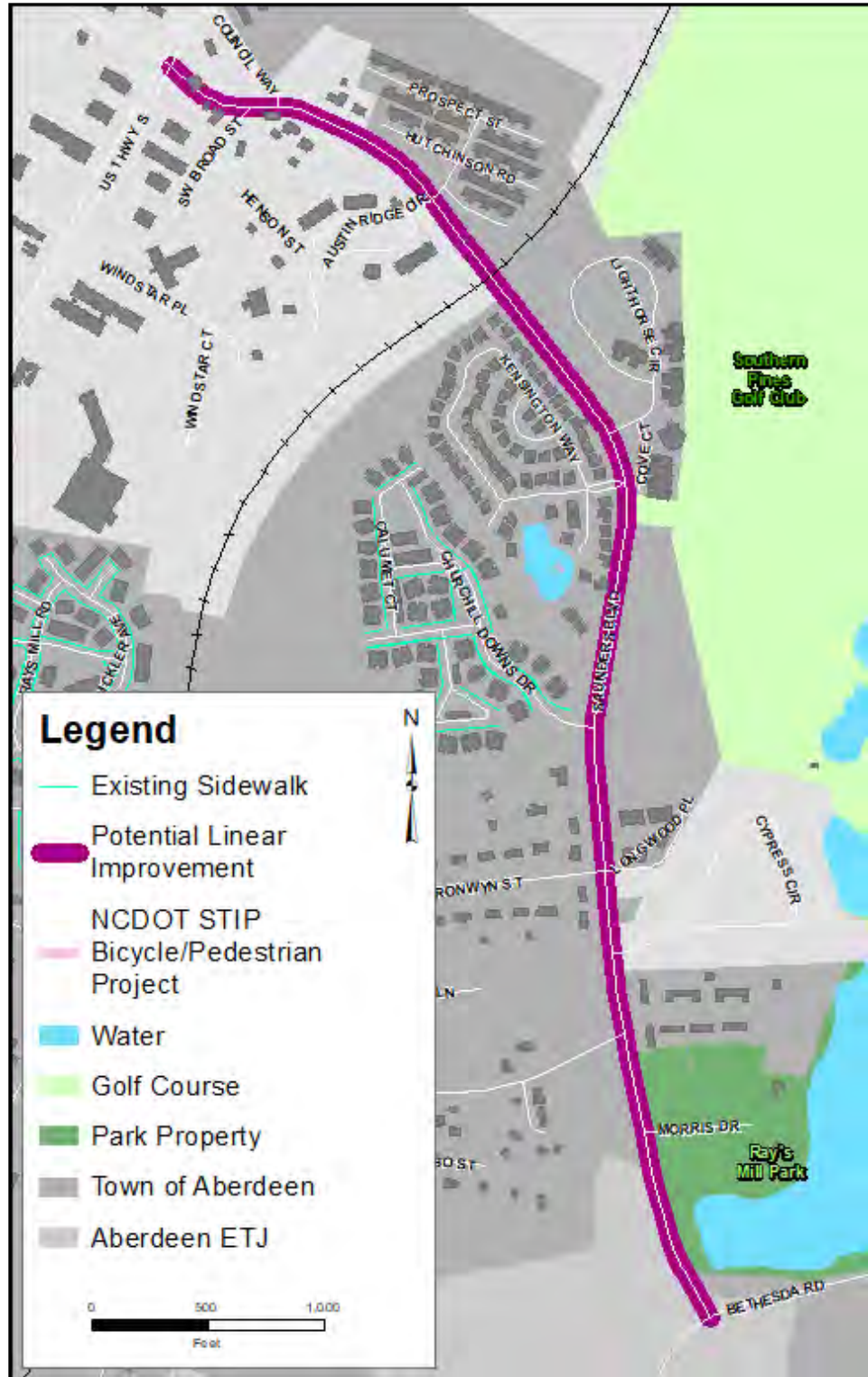




## Prioritized Projects

On the following pages, five priority corridors are outlined in plan view concepts and renderings, depicting recommended pedestrian improvements for improving mobility, access, and safety for pedestrians in the Town. The projects are shown at the corridor level. These priority projects were identified through public input from the online survey and public involvement event, in consultation with the Steering Committee and Town Staff, and to meet on-going bicycle and pedestrian facility development goals.





### Saunders Boulevard Shared Use Path

#### Existing Conditions

Saunders Boulevard is a two-lane roadway on the north side of Aberdeen that extends from US 1 south to Bethesda Road. There are several apartment complexes and neighborhoods that are accessed by the road, including the Park at Clearwater Apartment community and the Fairway Cove neighborhood. Ray's Mill Park is also located along Saunders Boulevard near the intersection of Bethesda Road. Ray's Mill Park has paved trails, a picnic shelter and grill, and fishing and non-motorized boating. The posted speed along Saunders Boulevard is 35 MPH, and the AADT ranges from 9,000 vehicles per day along the northern portion of the corridor and 5,000 vehicles per day along the southern portion of the corridor. There are currently no bicycle or pedestrian facilities along the roadway, and there is limited curb and gutter.

#### Challenges

While there appears to be sufficient right-of-way along Saunders Boulevard for construction of a shared use path (approximately 60 feet of right of way along the corridor), terrain challenges – particularly in the northern portion of the corridor – may limit the amount of space available for the facility. There are several driveways and, potentially, underground utilities along the corridor which will need to be considered in the design of the proposed shared-use path. The biggest challenge to improvements will be the bridge over the CSX tracks. The bridge is constructed for two lanes of traffic with limited shoulders and low guardrails. A major overhaul of the bridge or possibly the construction of an adjacent pedestrian bridge would be needed to accommodate non-motorized travel over the tracks.

#### Recommended Improvements

An 8-foot shared use path running adjacent to Saunders Boulevard is recommended. A shared use path would provide non-motorized access to the apartments and neighborhoods along the road, as well as access to Ray's Mill Park and would accommodate both pedestrians and bicyclists. The location of the shared use path (east side versus west side of the road) would need to be determined by an engineering study. Depending on the side of the road that the facility is located on, additional crossing facilities may be needed along the road so pedestrians and cyclists can cross Saunders Boulevard for access.

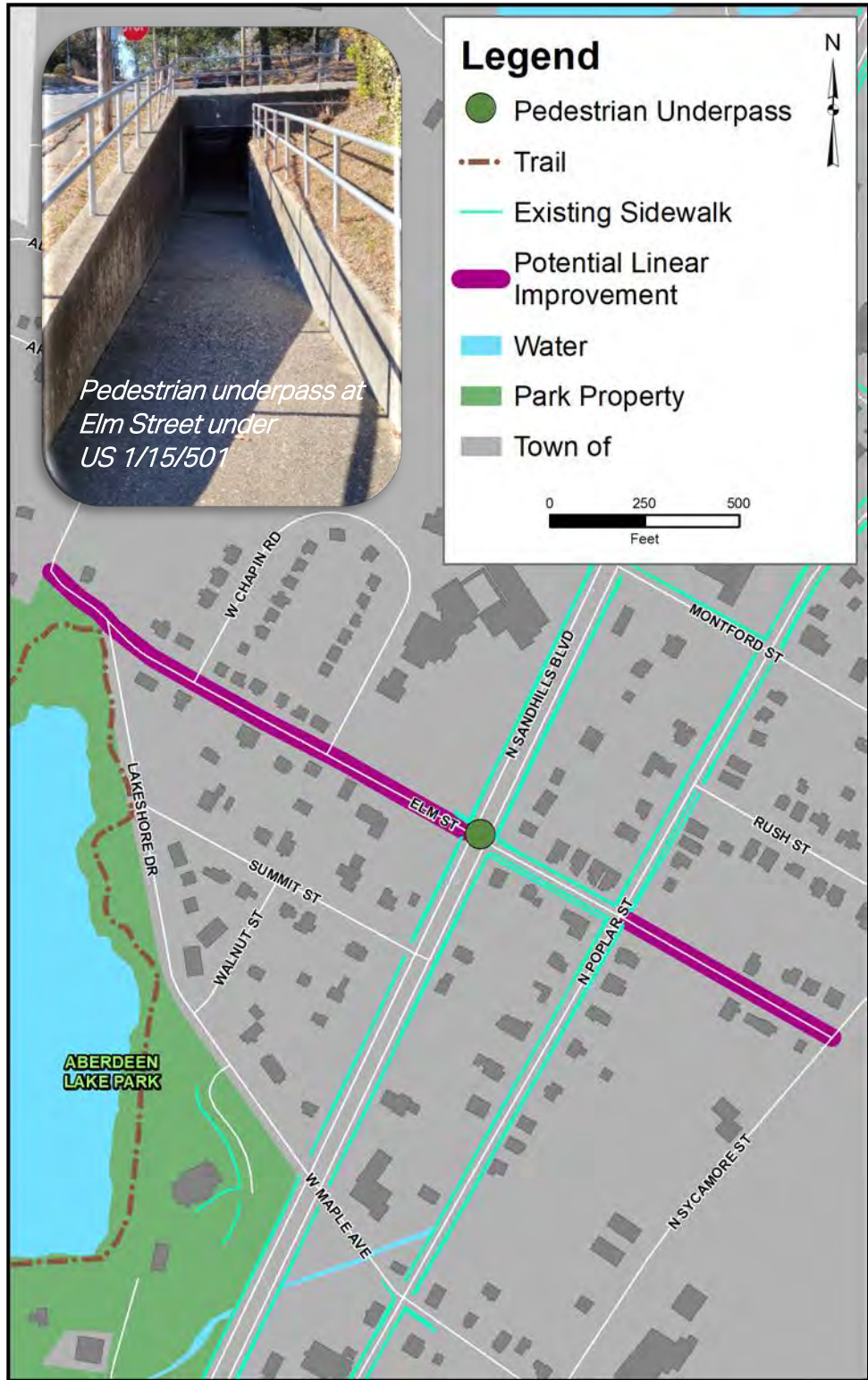
#### Project Details

Segment	Length (ft)	Cost
US 1 to Bethesda Road	6,450	\$ 5,640,000



Existing Saunders Boulevard, just north of Ray's Mill Park Entrance.





### Elm Street Sidewalk Extensions

#### Existing Conditions

Elm Street extends from Thomas Avenue in the west to Sycamore Street in the east, crossing US 1/15/501 and Poplar Street. A pedestrian underpass crosses under US 1/15/501 allowing pedestrians to cross. Land uses in the vicinity of the proposed project include residences, and the former Aberdeen Elementary School which closed in 2020 and is vacant but is expected to be redeveloped. Elm Street from Thomas Avenue to US 1/15/501 is a two-lane facility with 10-foot lanes and no curb and gutter, with approximately 45 feet of right of way. There are existing sidewalks on both sides of Elm Street from US 1/15/501 to Poplar Street. From Poplar Street to Sycamore Street, Elm Street has 20-foot of pavement and lacks pavement markings and curb and gutter, with approximately 50 feet of right of way.

#### Challenges

While there is likely sufficient right of way to construct sidewalks in the corridor the sidewalks would need to be close to the street and therefore would require curb and gutter, which would increase costs. The underpass is also narrow enough that it presents a challenge to bicycle travel.

#### Recommendation

Extending sidewalks along Elm Street on the west side of US 1/15/501 from Thomas Avenue to US the existing pedestrian underpass under US 1/15/501 and from Poplar Street to Sycamore Street is recommended. Sidewalks currently exist on both sides of the street on the section of Elm Street from US 1/15/501 to Poplar Street. Completing sidewalks along Elm Street would improve east-west connectivity in the town while taking advantage of the pedestrian underpass, as well as provide pedestrian connectivity to the future redevelopment of the former Aberdeen Elementary site. Sidewalks along Elm Street would also provide additional safe access to the trails around Aberdeen Lake where the trails intersect with Lakeshore Drive. Additionally, widening of the pedestrian underpass should be included with STIP project U-5815B so as to accommodate both pedestrians and cyclists.

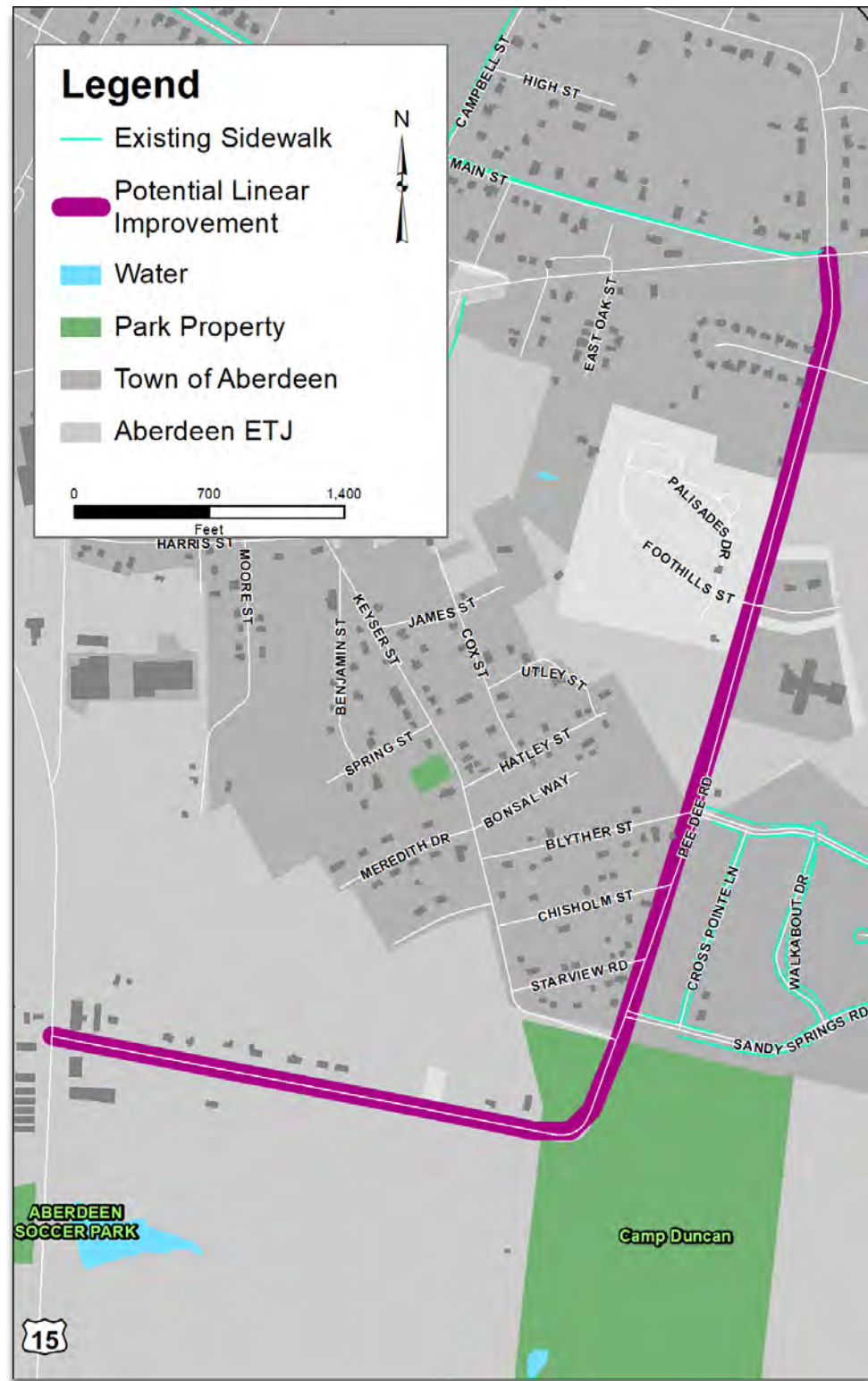
#### Project Details

Segment	Length (ft)	Cost
Thomas Ave to US 1/15/501	1,300	\$320,000
Poplar St to Sycamore St	620	\$190,000



*Crosswalk across Poplar Street connecting existing sidewalks on Elm Street to proposed sidewalks on Elm Street from Poplar Street to Sycamore Street.*





### Pee Dee Road Sidewalks

#### Existing Conditions

Pee Dee Road extends from US 15/501 in the east, turning north and travels north to NC 211. Land uses in the vicinity of the proposed project are rural residential, with neighborhoods on either side of the road after it turns north. Pee Dee Road is a two to three lane road with center turn lanes near the neighborhoods, and 11-foot lanes. There are currently no bicycle or pedestrian facilities along Pee Dee Road. The Pee Dee Road corridor also passes through property used by Camp Duncan, a residential wilderness camp designed to provide girls and their families an opportunity to work out problems through a highly structured outdoor program and accredited, non-public school. Camp Duncan is a ministry of Baptist Children's Homes of North Carolina.

#### Challenges

There are numerous driveways on the north side of Pee Dee Road, and the section of Pee Dee Road that turns north towards NC 211 also would require several crossings of local streets.

#### Recommendation

Sidewalks are recommended on one side of the road from US 15/501 to NC 211. There may be sufficient right of way available to construct the sidewalk with a 5-foot grassed buffer between the pavement and the sidewalk. The Pee Dee Road sidewalk recommendation shares an alignment with recommended project number 17 (Legacy Connector) which would provide a connection between downtown Aberdeen and the Legacy neighborhood via a combination of on-road and off-road improvements. The proposed improvements would also connect to the recommended improvements along US 15/501 that would connect to the Aberdeen Sportsplex and The Academy of Moore County.

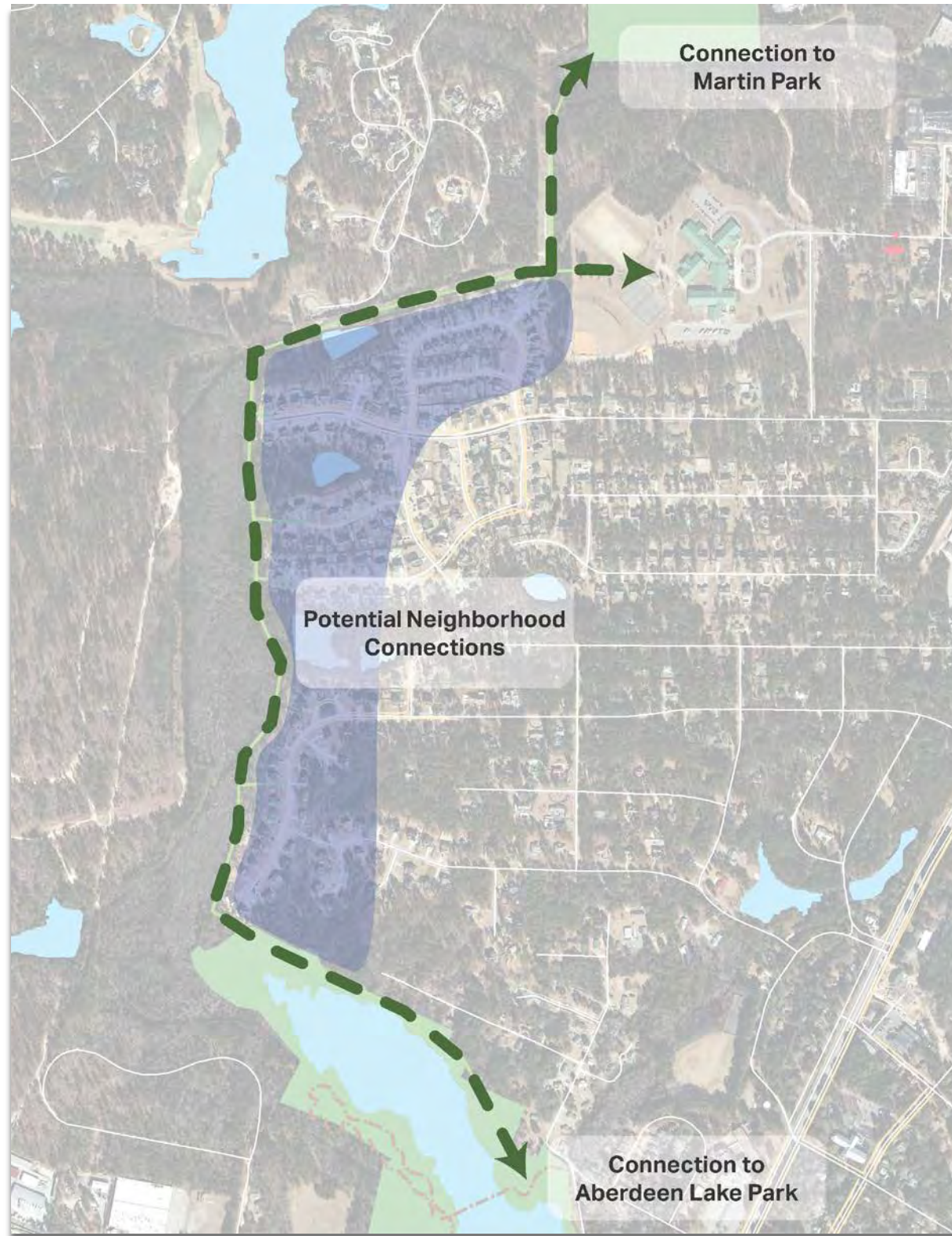
#### Project Details

Segment	Length (ft)	Cost
US 15/501 to NC 211	2,582	\$600,000



Proposed sidewalks on the north side of Pee Dee Road





Proposed Aberdeen Creek Trails, including a connection to Martin Park. Potential neighborhood connections are shown in blue.

### Aberdeen Creek Trails/Connection to Martin Park

#### Existing Conditions

Aberdeen Creek flows north to south on the western edge of Aberdeen connecting a pond on the grounds of the Country Club of North Carolina through a wooded area to Aberdeen Lake Park to the south. The Aberdeen Creek Trail was previously identified in the 2011 Aberdeen Pedestrian Transportation Plan. The trail would expand upon the Town's existing one-mile trail around the lake and would connect to local schools, residential areas, natural areas, and towards Downtown.

#### Challenges

Aside from the engineering challenges associated with the greenway, coordination with several stakeholders will be required, including landowners, neighborhood associations, and utility providers who control easements.

#### Recommendation

Recommended improvements include the construction of a trail or greenway from existing Aberdeen Lake trail northward along the eastern side of Aberdeen Creek to connect to Southern Middle School. Additional connections to neighborhoods to the east should be considered through coordination with homeowner associations, and potentially using the town-owned easement off Magnolia Drive. The steering committee also identified the need for a connection to the trails at Martin Park to the north possibly using a utility easement.

#### Project Details

Segment	Length (ft)	Cost
Aberdeen Creek Trail	1,300	\$4,000,000
Martin Park Connector	620	\$600,000



Existing trails at Aberdeen Lake Park





### Pinehurst Street Paved Shoulders

#### Existing Conditions

Pinehurst Street is a two-lane facility with 10-foot lanes that travels south to north from Roseland Road to NC 5/W. South Street. Land use in the vicinity of the road is residential, and local neighborhood roads connect to Pinehurst Street, including Saunders Avenue and Wilder Avenue. Pinehurst Street is also part of Moore County’s designated bicycle route known as Tour de Moore which enters the town on Pinehurst Street before turning east on NC 5/W. South Street. The posted speed on Pinehurst Street is 35 MPH, and the AADT is 2,500 vehicles per day.

The 2012 Aberdeen Bicycle Transportation Plan identified Pinehurst Street in need of bicycle facilities and recommended wide paved shoulders. The recommendation was carried forward based on support from the steering committee for this planning effort.

#### Challenges

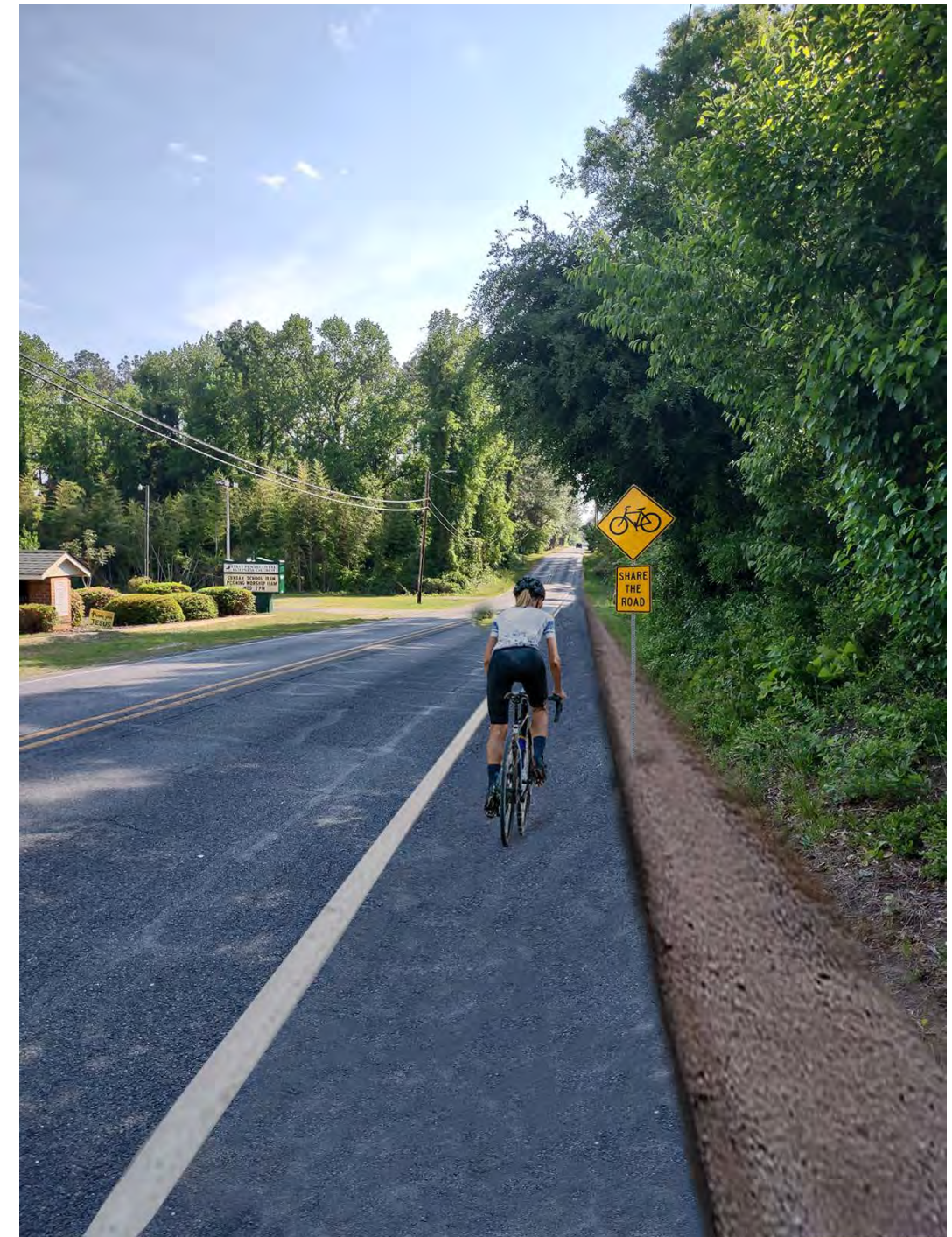
Challenges to bicycle improvements along Pinehurst Street include limited pavement space and right of way that prevents a dedicated bicycle facility from being constructed.

#### Recommendations

Four-foot paved shoulders on both side of the road and share the road signage are recommended on both sides of Pinehurst Street from Roseland Road to NC 5/W. South Street. This would provide cyclists a safer experience along the road, and connections to other proposed facilities on Roseland Road (paved shoulders) and on NC 5/W. South Street (shared lane markings).

#### Project Details

Segment	Length (ft)	Cost
Roseland Road to NC 5/W. South Street.	2,620	\$745,000



Proposed wide-paved shoulders and share the road signage along Pinehurst Street.



## Sidewalk Recommendations

Recommended sidewalk improvements identified by the Steering Committee and public input are provided on the following pages in this Plan. Recommended sidewalks would improve pedestrian connectivity in the Town, providing pedestrian access from neighborhoods to and from community features including downtown, parks, businesses, and areas where businesses are clustered. These recommendations were selected to expand the existing sidewalk network, address safety concerns, and to better connect destinations and neighborhoods.

In addition to the location and extents of the sidewalk recommendations, additional recommendations that relate to all sidewalk recommendations include:

- Sidewalks in Aberdeen should be at least 5 feet wide, and, where possible, should include a landscaped buffer of 1-foot or 6-foot with trees/shrubs between the sidewalk and roadway.
- Drainage improvements may be necessary additions to a sidewalk project based on engineering assessment and existing conditions.
- Areas of higher pedestrian volume may require greater width. Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible.

All sidewalks would be required to meet ADA minimum standards. Additionally, NCDOT requires that any sidewalk project that would cross at a signalized intersection would require signal plans to be revised, and that those projects must have funding in place to install the upgraded signalization.

Recommended sidewalks and yield roadway improvements are shown in Figure 4-3 and described in Table 4-2.

Table 4-2. Recommended Sidewalk Improvements

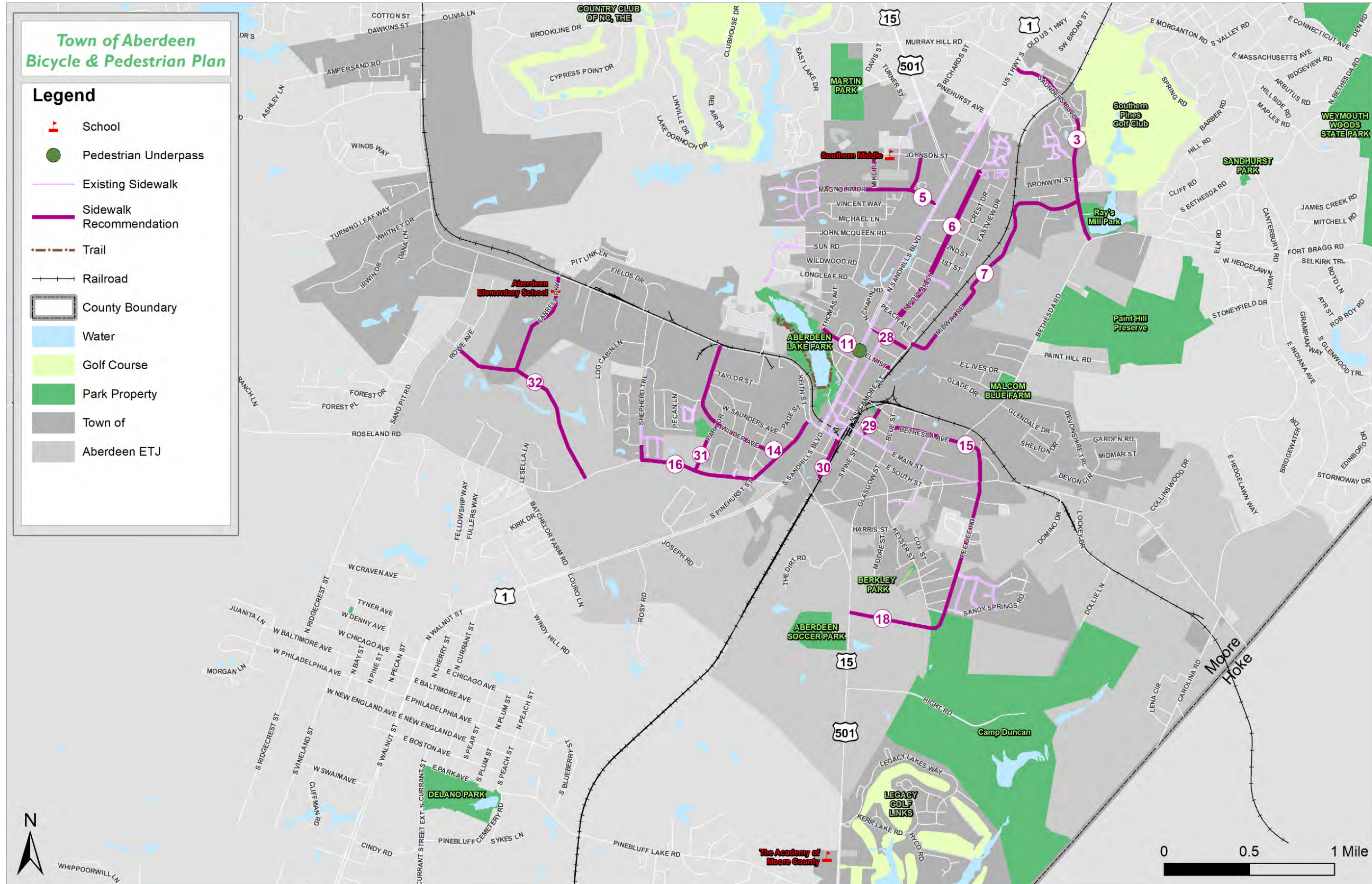
Map Label	Project	Street Name	From	To	Length (ft)	Cost
3*	Sidewalk/shared use path on Saunders Blvd	Saunders Blvd	US 1	Bethesda Rd	6,450	\$1,835,000 / \$825,000
5	Sidewalks along Magnolia Dr, Mike Pl and Atrium St	Magnolia Dr, Mike Pl, Atrium St	US 1/15/501	Lightwater Dr	5,860	\$1,280,000
6	Extend sidewalks on both sides of Poplar St from Peach Ave to meet planned sidewalks at Providence Pl (EB-6001)	Poplar Street	Peach Avenue	Johnson St/ Providence Pl	5,270	\$2,055,000
7	Sidewalk/shared use path along Midway Rd	Midway Road	N Sycamore St	Saunders Blvd	8,020	\$1,550,000
11*	Elm St sidewalk extensions from Thomas Ave to Sycamore St.	Elm Street	Thomas Avenue	N Sycamore Street	2,410	\$620,000
14	Sidewalk on Saunders Ave, Wilder Ave, and S Pinehurst St (Access to Colonial Heights Park)	Saunders Ave, Wilder Ave, S Pinehurst St	NC5	NC 5 (near Franks Tires)	6,240	\$1,365,000
15	Sidewalk along Bethesda St from Elm St to NC 211	Bethesda St	Elm Street	NC 211	3,740	\$845,000

16	Roseland Road	Pinehurst Street, Roseland Road and Shepherd Trail	Hydrangea Dr	Wilderness Ave	5,085	\$1,115,000
18*	Sidewalk Pee Dee Rd	Pee Dee Rd	US 15/501	NC 211	2,585	\$590,000
28	Montford Street Sidewalk Connector	Montford St	US 15/501	N Sycamore Street	1,265	\$335,000
29	N Sycamore Street Sidewalk Connector	N Sycamore St	E Main St	E Maple St	970	\$380,000
30	S Sycamore Street Sidewalk Connector	S Sycamore St	W South St	Terminus	1,405	\$540,000
31	Park Drive Sidewalk Connector	Park Dr	Wilder Ave	Roseland Rd	1,610	\$400,000
32	Martin Farms Sidewalk/Trail	Martin Farms development				

\* - Priority project



Figure 4-3. Sidewalk Recommendations





## Bicycle Recommendations

Recommended bicycle improvements identified by the steering committee and public input are provided on the following pages in this Plan. Additionally, the 2012 *Aberdeen Bicycle Transportation Plan* was reviewed for recommendations related to the two designated bicycle routes that pass through the Town, the Sandhills Sector and the Tour de Moore. While the Town should continue to pursue improvements identified in the 2012 Plan, some of the recommendations identified by the Steering Committee were along the routes (such as improvements to Poplar Street and Bethesda Road) and these improvements as well as recommended improvements along the remainder of the bicycle routes would make bicycling safer through the Town.

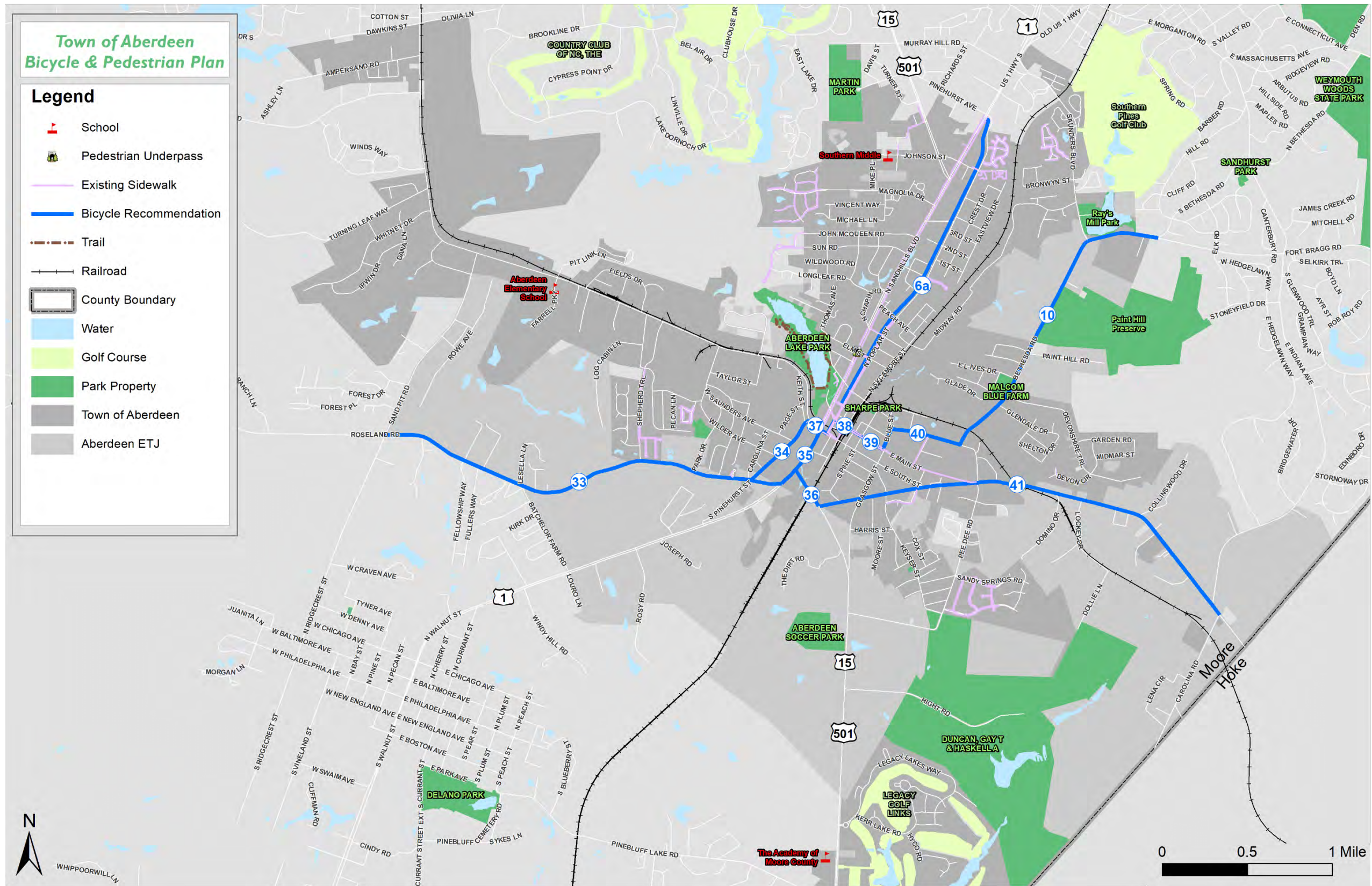
Recommended bicycle projects are shown in Figure 4-4 and described in the table below.

Table 4-3. Recommended Bicycle Improvements

Map Label	Project	Street Name	From	To	Length (ft)	Cost
6a	Pavement markings (sharrows) and share the road signage on Poplar Street	Poplar Street	South Street	US 1	11,360	\$20,000
10	Bicycle facility along Bethesda Rd from Bethesda Ave to Town limits	Bethesda Rd	Bethesda Ave	Town limits	11,980	\$3,910,000
33	Roseland Road paved shoulders	Roseland Rd	Sand Pit Rd	US 1	13,000	\$3,565,000
34*	Pinehurst Street paved shoulders	Pinehurst St	Roseland Rd	NC 5	2,620	\$745,000
35	US 1 Shared Use Path	US 1	Roseland Rd	NC 5	2,075	\$1,160,000
36	US 15/501 paved shoulders	US 15/501	US 1	NC 211	1,545	
37	NC 5/W South Street shared lane markings	NC 5 and W South Street	Pinehurst St	Poplar St	710	\$20,000
38	W Main Street shared lane markings	W Main St	Poplar St	N Sycamore St	400	\$20,000
39	E Main Street Bicycle Lane	E Main St	N Sycamore St	Blue St	4,271	\$1,840,000
40	Blue Street/Bethesda Avenue shared lane markings	Blue St and Bethesda Ave	E Main St	Bethesda Rd	10,800	\$20,000
41	NC 211 paved shoulders	NC 211	US 15/501	Town limits	14,100	\$4,440,000

\* - Priority Project

Figure 4-4. Bicycle Recommendations





## Shared-Use Path/Greenway Recommendations

A shared-use path is a paved shared use path designed to meet ADA standards for use by both bicyclists and pedestrians. The shared-use path is separated from the roadway by an open space or a physical barrier, or within an independent-right-of-way. They are often referred to greenways when on an independent right-of-way or follow a utility easement. The Steering Committee identified several off-road connections that could be possible using utility easements. Recommended shared-use path and greenway improvements are described in Table 4-4. and shown in Figure 4-5.

Table 4-4. Recommended Shared-Use Path/Greenway Projects

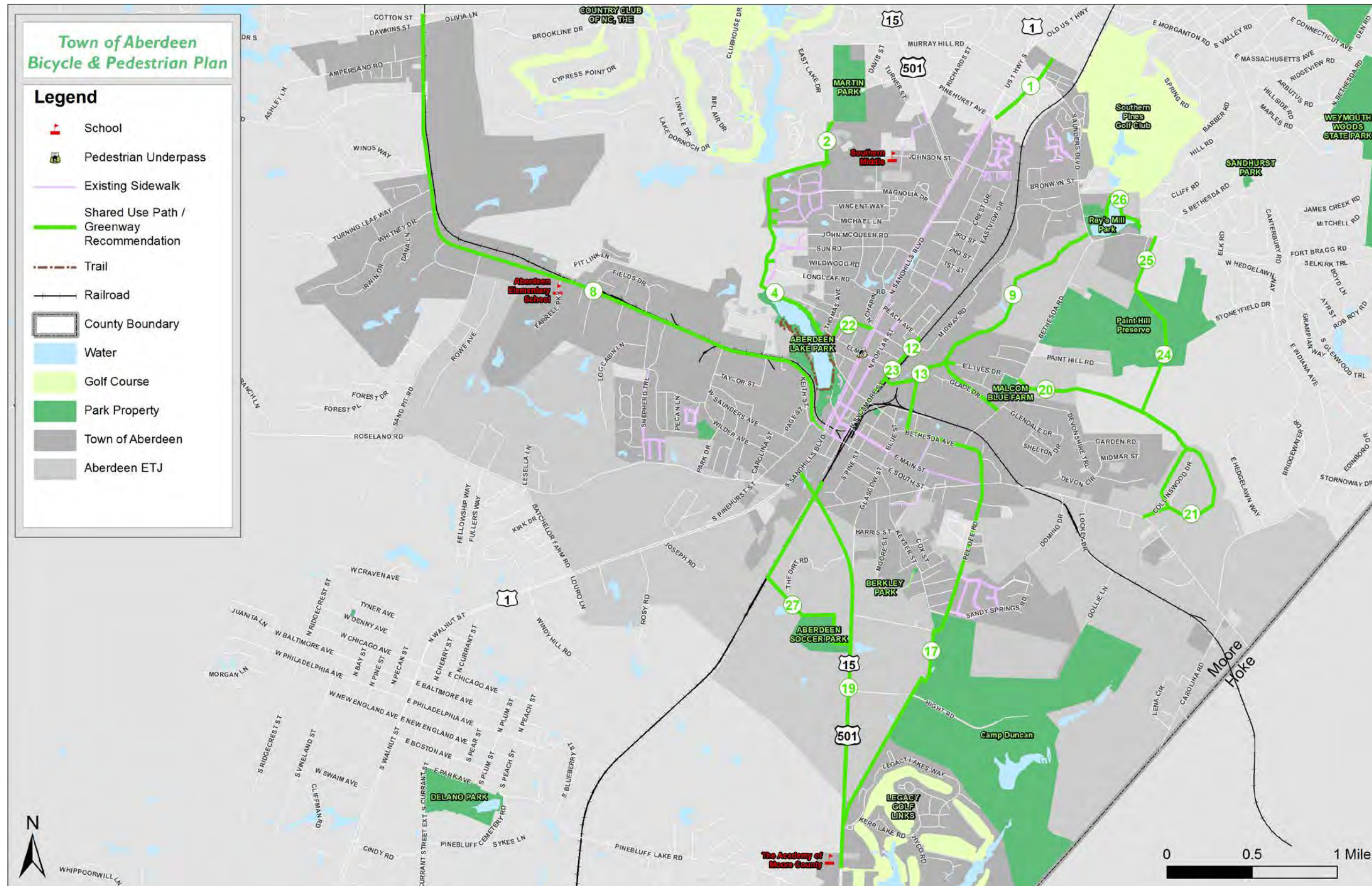
Map Number	Multi-Use/ Greenway Recommendation	From	To	Length (ft)	Cost
1	Off-road connector between N Poplar St to slightly past Prospect Dr	Poplar St	Prospect St	2,600	\$1,370,000
2*	Shared-use-path connector between Martin Park and proposed Lake Aberdeen Trail	Martin Park	Proposed Aberdeen Creek Trail (project 4)	1,375	\$675,000
4*	Aberdeen Creek Trails	Johnson St	Aberdeen Lake Park	9,100	\$4,065,000
8	Shared use path on NC5 from US1/15/501 to Town limits (U-5756 improvements currently include sidewalks)	NC 5	Aberdeen town limits (Olivia Ln/Dawkins St)	21,100	\$10,000,000
9	Greenway to Rays Mill Pond (using creek and sewer easement)	E L Ives Drive	Ray's Mill Pond	6,390	\$2,930,000
12	Shared-use path on Sycamore St	Midway Rd	Proposed shared use path (project 13)	1,365	\$720,000
13	Downtown to Malcolm Blue Farm Greenway	Sycamore St	E L Ives Dr	4,760	\$2,680,000
17	Legacy Connector	Downtown to Malcolm Blue Farm Greenway (project 13)	US 15/501 and Legacy Lakes Way	17,000	\$7,890,000
19	Shared use path on 15/501	US 1	The Academy of Moore County	12,700	\$6,105,000
20	Bethesda Pines Trail	Bethesda Rd	Through proposed development	1,900	\$895,000
21	Collinswood Trail	NC 211	Through proposed development	6,770	\$3,365,000
22	Aberdeen Elementary Trail	US 1	Aberdeen Lake Park	1,600	\$830,000
23	Downtown Exercise Trail	Knight St	Peach Ave	3,100	\$1,555,000
24	Paint Hill Trail	Bethesda Pines Trail (Project 20) and Collinswood Trail (Project 21)	One Down Street	8,300	\$3,670,000

25	One Down Street Trail	Paint Hill Trail	Bethesda Rd	1,600	\$765,000
26	Ray's Mill Park Trail	Within Ray's Mill Park		2,500	\$1,165,000
27	Aberdeen Sportsplex Trail	S Sycamore St	Aberdeen Sportsplex	7,400	\$3,635,000

\*Priority Project



Figure 4-5. Recommended Shared-Use Paths and Greenways



## Spot Projects

The purpose of a spot improvement is to address bicycle and pedestrian challenges at specific locations, such as intersections, crossings, and short gaps in a network. These types of improvements are generally low-cost and provide enhancements through surface improvements, signing, access enhancements, or functional upgrades. They can also include recommendations for specific locations of bicycle parking and bicycle repair stations.

The following spot project types are recommended in this Plan:

- Crosswalks
- Intersection safety improvements
- Lighting improvements

All proposed spot improvements would be required to meet ADA standards, including ADA ramps, and include pedestrian amenities such as pedestrian scale lighting, which would light up the actual crossing. Any recommended midblock crossing on state roads would need to be approved by NCDOT and would require adequate sight distance to be approved. Finally, recommended crosswalks would need to have receiving sidewalks in place to be approved by NCDOT.

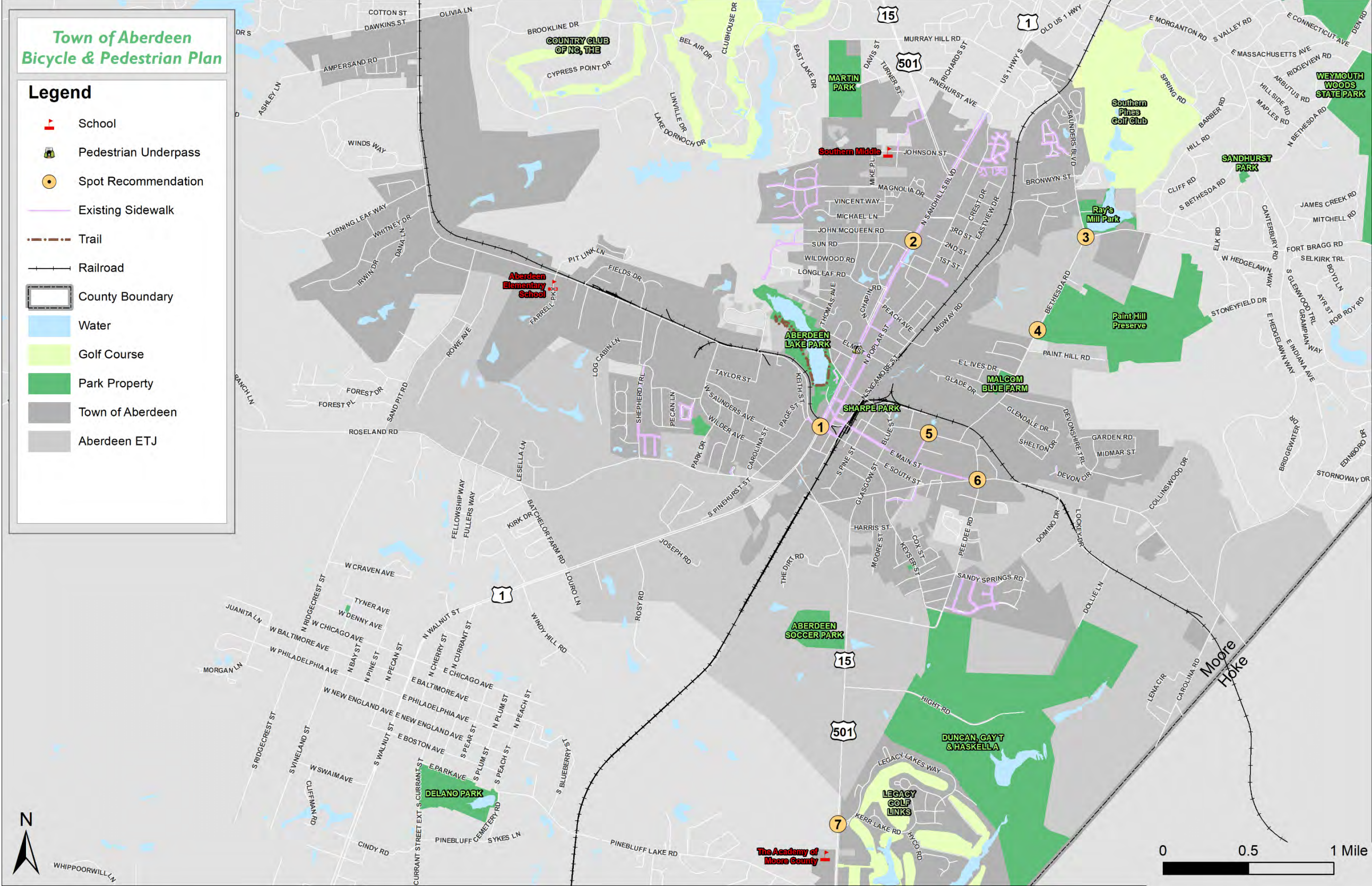
Figure 4-6 shows the location of the spot improvements, and Table 4-5 describes the spot improvements.

Table 4-5. Recommended Spot Improvements

Map Label	Recommendation	Street	Street 2	Recommended Improvement	Cost
1	Pedestrian crosswalks and signals across US 1/15/501 at South St/NC 5	US 1/15/501	NC 5/South St	Pedestrian signals, and high visibility crosswalks	
2	Study additional crossing opportunities across US 1 between Maple St and 15-501	US 1/15/501 between US 15/501 and Maple Street			
3	Intersection safety improvements	Saunders Blvd	Bethesda Rd	TBD	
4	Lighting along Bethesda Rd	Bethesda Rd		Pedestrian lighting	
5	Lighting along Bethesda Ave	Bethesda Ave		Pedestrian lighting	
6	Pedestrian Intersection Improvements	NC 211	Pee Dee Rd	Pedestrian activated signal and crosswalks	
7	Pedestrian Intersection Improvements	US 15/501	Legacy Lakes Way	Pedestrian activated signal and crosswalks	



Figure 4-6. Recommended Spot Improvements





## Additional Projects

### *Green Infrastructure and Resiliency*

Developed areas with impermeable surfaces, such as pavement and building materials prevent groundwater infiltration, and instead exacerbate stormwater runoff and localized flooding. This direct flow of stormwater into nearby waterbodies can carry pollutants and lead to erosion, flooding, and degradation of aquatic habitat, property, and infrastructure damage depending on the speed and flow of the runoff. Green infrastructure includes a range of approaches for managing stormwater, however, three approaches that will be applicable to the Plan are described briefly below.

#### *Permeable Pavement*

An environmentally friendly alternative to traditional asphalt or concrete. Permeable pavement helps reduce stormwater runoff, recharges groundwater, traps suspended solids and pollutants, reduces the heat island effect, and reduces the need for grey infrastructure including retention basins and water collection areas.<sup>9</sup>

#### *Bioswales and Bioretention cells*

Low maintenance, linear landscaped depressions or channels designed to capture and treat stormwater. Bioswales are a low impact development method that typically contain mulch, native plants, and may contain drought tolerant plants.<sup>10</sup> These bioretention systems contain gently sloped sides that direct water, allowing for the slow absorption of water and pollutants, and are engineered and constructed to ensure adequate percolation and filtration of captured runoff.

#### *Native Landscaping*

Trees, shrubs, or other plantings that are native to the ecosystem help promote evapotranspiration which reduced the amount of stormwater runoff or flooding. Landscaping also helps absorb pollutants while promoting increased habitat for flora and fauna. This helps enhance the pedestrian experience as well, providing a buffer between active transportation routes and the roadway.



<sup>9</sup> Green Building Alliance: Permeable Pavement at <https://www.go-gba.org/resources/green-building-methods/permeable-pavements/>

<sup>10</sup> EPA: Enhancing Sustainable Communities with Green Infrastructure at <https://www.epa.gov/sites/production/files/2016-08/documents/green-infrastructure.pdf>

### Riparian Buffers

Riparian buffers (also called greenbelts) are undeveloped areas adjacent to bodies of water, typically consisting of native plantings and shrubs. They help capture runoff by evapotranspiration and increasing stormwater infiltration into soil, stabilize soils, reduce shoreline erosion, and provide increased wildlife habitat. These are measures that can be taken along active transportation routes that align with the Town’s flood-prone areas.

### Wayfinding and Lighting Improvements

Wayfinding signage and lighting is recommended throughout the Town as a strategy to achieve the following objectives:

- Promote the Town as a destination for walking and tourism
- Encourage walking by making the town easier to navigate
- Contribute to the Town’s development projects and effort to improve walkability
- Improve the safety and overall visibility of the community through installation of lighting

Wayfinding signage should complement the Town’s landscape and list nearby destinations with arrows for navigation (Figure 4-7). Walking distances may be included on the signs as space allows to further orient the pedestrian.

Lighting should consider the lamp temperature and be mindful of long-term maintenance and operation costs. Dark sky lighting options may also be an important consideration to protect against light trespass for habitat-sensitive recreation areas.

Figure 4-7. Wayfinding Signage



## 4.5 Recommended Active Transportation Policies and Programs

In addition to recommended infrastructure and policy improvements, the planning team considered policies and programs that, if implemented, could encourage non-motorized transportation usage in the Town and improve safety conditions for bicyclists and pedestrians.

### Recommended Policies

The Town of Aberdeen’s zoning ordinance was reviewed to understand how it influences the planning of active transportation enhancements. One of the most cost-effective strategies for implementing this Plan would be to establish land development regulations and street design policies and standards that promote walkable new development and capital projects.

The consultant team reviewed regulatory and policy language from other communities in North Carolina and used best practices that provide successful land use and active transportation integration, alignment with sustainable nature-based planning in response to flooding and to encourage resiliency, and Complete Streets. The goal is to encourage safe, alternative options to vehicular use through policy-level planning efforts. These should work in tandem with the infrastructure projects recommended throughout Section 4.4. Including safe alternative options to vehicular use can help encourage residents to walk for both transportation and leisure purposes. Redevelopment and new development permitted in the Town should provide for active transportation facilities. The City Council can encourage pedestrian activity by adopting the policy updates as listed in Table 4-6.

Table 4-6. Recommended Policy Updates

Code, Ordinance, Existing Condition	Current Policy or Condition	Recommended Changes and Comments
3.8.5 Overlay Districts (UDO)	Currently states that it is “reserved”	<p>Create an Active Transportation Overlay Zoning District along all linear corridors defined and mapped in the Aberdeen Bicycle and Pedestrian Plan (2022). See “Recommended Infrastructure Projects” Section 4.4.</p> <p>This regulation is intended to require sidewalk/multiuse infrastructure requirements for any new or proposed construction or reconstruction projects throughout the city.</p>



Code, Ordinance, Existing Condition	Current Policy or Condition	Recommended Changes and Comments
<p>3.4 Business Zoning Districts Table of Area, Setback, Living Area, and Height Requirements (UDO)</p>	<p>Zoning districts (including NC, CB, and GC) have minimum front setbacks of n/a up to 25 feet minimum front setbacks.</p>	<p>Amend zoning to require minimum front setbacks in Business Districts to align with city-center (C-C) setback of 15 feet. Require new commercial buildings to be placed close to the sidewalk and require either rear or side parking.</p> <p>The standard setbacks of 20 - 25 feet for commercial buildings does not create a pedestrian-friendly environment. In walkable urban environments, buildings placed at the edges of sidewalks and public spaces, rather than being set back, can greatly enhance the character of the pedestrian environment. To promote design that fosters a safe and inviting bicycle/pedestrian environment, the adoption of a smart growth, performance-based, provisions can help create vibrant walkable communities.</p> <p>More information regarding smart growth codes can be found at <a href="https://www.epa.gov/smartgrowth/codes-support-smart-growth-development">https://www.epa.gov/smartgrowth/codes-support-smart-growth-development</a> and <a href="https://formbasedcodes.org/">https://formbasedcodes.org/</a>.</p>
	<p>New Section</p>	<p>Parking lots should be located behind future developments to provide a safer entrance for pedestrians accessing the business.</p>
<p>5.9 Sidewalks Standard 5.9.4</p>	<p>Requires Sidewalks and or shared-use paths on Collector and Sub-Collector Streets and Local Streets subject to specific standards or TRC Determination and Configuration.</p>	<p>Amend this section to require sidewalks or shared-use paths along both sides of all streets,</p>
<p>5.9 Sidewalks (UDO)</p>	<p>(A) Sidewalks shall be at least five (5) feet wide and constructed of concrete at least five (5) inches thick, or such other material as may be approved by the City Engineer.</p>	<p>Amend to include "active transportation including sidewalks and multiuse facilities."</p> <p>Amend to include that all facilities require compliance with ADA. This should include curb ramps on sidewalks at all crossings and a restriction of cross slopes of more than two (2) percent. National and statewide plans are used by NCDOT to guide the planning, design, and construction of bicycle and pedestrian infrastructure.</p> <p>Amend to include wider sidewalks, between 10'-15', in the CB zoning district to allow for outdoor dining.</p>
	<p>(B) Sidewalks should be installed along the frontage of all new development or redevelopment within the CB, NC and GC zoning districts. Sidewalks shall be installed within the</p>	<p>Amend to include active transportation (e.g., sidewalks or shared-use paths) shall be located on at least one side of each street or roadway of a new development, subdivision, redevelopment, or newly paved street within NC, CB, and GC zoning districts.</p>

Code, Ordinance, Existing Condition	Current Policy or Condition	Recommended Changes and Comments
	right-of-way and connect to adjacent facilities in all zoning districts.	
	New Subsection	Amend to include new sub section that vegetative buffering should be provided along newly constructed, developed, or re-developed sidewalks or shared-use paths to provide increased drainage during storm or flood events, provide shade, and natural resource protection. Permeable pavement should also be used, where feasible, to increase drainage.  This should follow FHWA's <a href="#">Nature-based Resilience for Coastal Highways</a> guidance.
	New Subsection	Amend to include new sub section that when an existing sidewalk or shared-use path is closed for construction or maintenance reasons – on the walkway itself or on adjacent property – an adequate detour route should be established and signed, if feasible.
6.4 Flood Damage Prevention Ordinance (UDO)	Section 6.4.3 includes Provisions for Flood Hazard Reduction	Add sub article provision that requires hybrid green/nature-based infrastructure and stormwater infiltration, conveyance, and storage improvements be included on all roadway upgrades, new construction, or reconstruction to help mitigate impacts from stormwater and nuisance flooding. This may include larger-diameter grey infrastructure and combinations of green and gray infrastructure such as vegetative buffers, storm sewers, and culverts.  This should follow FHWA's <a href="#">Nature-based Resilience for Coastal Highways</a> guidance.
5.7 Signage	New Section	Signage that provides wayfinding for active transportation users should be required on construction of all active transportation facilities including greenways, shared use paths, bicycle facilities, and sidewalks.
5.10. Lighting	New Section	Provision of lighting along active transportation routes, designed by the City, should be required for new construction.

- Town of Aberdeen UDO <https://www.townofaberdeen.net/documents.aspx>
- NCDOT Complete Streets Planning and Design Guidelines: <https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities: [http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07\(263\)\\_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07(263)_FR.pdf)
- WalkBikeNC North Carolina Statewide Pedestrian and Bicycle Plan: <https://altaplanning.com/wp-content/uploads/WalkBikeNCPlanChapterslowres.pdf>
- FHWA Nature-based Resiliency for Coastal Highways: [https://www.fhwa.dot.gov/environment/sustainability/resilience/onqoing\\_and\\_current\\_research/green\\_infrastructure/implementation\\_guide/fhwa\\_hep19042.pdf](https://www.fhwa.dot.gov/environment/sustainability/resilience/onqoing_and_current_research/green_infrastructure/implementation_guide/fhwa_hep19042.pdf)

## Recommended Programs

To encourage active transportation in the Town, a series of programs can be administered to socialize the public to multimodal activities and/or facilities. The focus is to educate both active transportation users and vehicular users while bringing awareness to proposed recommendations. Five programs that would be beneficial to the Town of Aberdeen are as follows:

- Safety campaigns to educate pedestrians and drivers
- Enhance safe access to schools
- Provide open street and walking events
- Improve local aesthetics with public art
- Enforce existing driving laws and speed limits

### *Active Transportation Advisory Committee*

The Town should consider forming an Active Transportation Advisory Committee (ATAC) in order to encompass all multimodal activities and for alignment with NCDOT's IMD nomenclature and multimodal directives. This group will be important to organize and maintain the proposed programs and identify and seek out funding sources that will help the Town achieve its goal of becoming a more walkable community.

The ATAC will serve to research funding opportunities, assist with submission of grant applications, and play a role in selecting and monitoring the work of consultants and contractors designing and constructing pedestrian infrastructure. It would also serve to form partnerships between schools, businesses, and neighboring municipalities. The ATAC should continue to meet regularly and provide updates to the Town Commissioners. In addition to helping implement proposed projects, the Town Commissioners and ATAC should promote education, safety, encouragement, enforcement and evaluation, events, and beautification programs.

### *Safety Campaigns to Educate Pedestrians, Active Transportation Users, and Drivers*

Watch for Me NC is a comprehensive campaign aimed at reducing the number of active transportation users hit and injured in crashes with vehicles. The campaign consists of educational messages on traffic laws and safety, and an enforcement effort by area police. With more than 3,000 pedestrians and 850 bicyclists hit by vehicles each year in North Carolina, NCDOT in collaboration with municipalities and universities has launched the Watch for Me NC campaign to reduce crashes through education and enforcement. Education materials in the form of a website, public service announcements, pamphlets, bus wraps, billboards, and bumper stickers have been developed and distributed to increase awareness of pedestrians and bicyclists and applicable laws. Many of the materials can be distributed at local festivals, events, and at local businesses. The campaign also provides increased training to law enforcement. Many of these resources are downloadable from Watch for Me NC at: <http://www.watchformenc.org/>.





### *Enhance Safe Access to Schools*

Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.



Active Routes to School is the North Carolina SRTS project that is supported by a partnership between NCDOT and the Division of Public Health. The goal of the project is to increase the number of North Carolinians that meet the physical activity recommendations by increasing the number of elementary and middle school students who safely walk and bike to or from school. More information on SRTS can be found at: [https://www.ncdot.gov/divisions/bike-ped/Documents/NCDOT\\_SRTS\\_Description.pdf](https://www.ncdot.gov/divisions/bike-ped/Documents/NCDOT_SRTS_Description.pdf)

In addition to the SRTS, the Town could facilitate its school's participation in the NCDOT program Let's Go NC! — Pedestrian and Bicycle Safety Curriculum. Aimed to instruct children between grades K-5, the program focuses on walking and biking skills to promote safety. To promote healthy and active lifestyles, a curriculum was developed that includes aspects of the SRTS program in addition to classroom, video, and exercise materials.



More information can be found at: <https://www.ncdot.gov/initiatives-policies/safety/lets-go-nc/Pages/default.aspx>

### *Open Street & Walking Events*

The Town of Aberdeen has unique characteristics that can be showcased through outdoor events that could be supported by active transportation facilities. An outdoor festival could be set up along one of the downtown streets, such as Poplar Street or Main Street. If the proposed active transportation projects are implemented in this Plan, this location could also be surrounded by walkable and inviting streets that would encourage festival attendees to explore the rest of the Town.

### *Public Art & Environmental Education*

Creating a welcoming and enjoyable walking environment is an important component of developing a walkable community. Local art could be incorporated with sidewalk projects and alongside signage for local businesses and seen as an advertising opportunity to promote economic vitality for local businesses, as well as environmental awareness and a sense of stewardship for the local species. By including a small plaque with the name of the species or artist along with their business name and location, the Town could encourage local artists to donate their art or even pay a small fee to cover installation and maintenance fees in exchange for the advertising that would result from the public display of their art. The Town may also partner with the Arts Council of Moore County on outdoor public art projects.

### *Educating Citizens on Existing Driving Laws & Speed Limits*

Education is essential for teaching and reminding drivers of all ages the applicable laws and responsibilities of motorists as they pertain to safely sharing the road with bicyclists and pedestrians. This also includes educating police officers on pedestrian and active transportation user laws.

Although children aged 5 to 15 years are not yet old enough to drive, it can be expected that the majority will become automobile users. Educating elementary and middle school students (the future driving population) about bicycle and pedestrian safety provides excellent opportunities to make a difference in a two-fold manner.

Pedestrian safety, as well as how to safely maneuver an automobile while in the presence of pedestrians and bicycles can be an instrumental part of any driver's education program in the Town. This training will allow new generations to be more aware of the simple fact that motorized vehicles do not have sole right to the transportation network, and it is everyone's responsibility to be careful while using roadways.

More information can be found at: [www.ncdot.gov/dmv](http://www.ncdot.gov/dmv).

The NC Bicycle and Pedestrian laws can be found at: [www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx](http://www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx).



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## 5.0 Implementation

Achieving the vision, goals, and objectives of this Plan will require the commitment of Town officials and staff, the ATAC, TARPO, NCDOT, and the support and leadership from the community and other partner organizations. Guided by the goals, objectives, and strategies, the Town will continue working to improve pedestrian safety and connectivity.

The implementation strategy for this Plan includes several components to assist with translating this document into implemented programs and constructed pedestrian facilities:

- Key Action Steps: Describing actions to help the Town implement the recommendations of this Plan and improve overall bicycle and pedestrian facilities
- Project Development Strategies: Utilizing key action steps to implement specific projects
- Funding Process and Sources: Identifying and mobilizing funding for projects
- Performance Evaluation Measures: Evaluating the effectiveness of projects

Adopting this Plan is a necessary first step for improving pedestrian safety and mobility in the Town. Coordination with NCDOT Division 8 and TARPO will be critical to implementing the infrastructure projects proposed in this Plan.

### 5.1 Key Action Steps

The newly formed ATAC is entrusted with overseeing the implementation of the Plan with assistance from Town staff and participation by the stakeholders. The ATAC would be responsible for meeting regularly to receive updates and guide progress on the action steps. It would also author the annual progress update submitted to the Town Board of Commissioners on multimodal conditions in Aberdeen.

In addition, all infrastructure recommendations along NCDOT maintained roadways would require review and approval by NCDOT Division 8 prior to implementation. All roadway projects along NCDOT owned roads should be compliant with the NCDOT Complete Streets policy and consider pedestrian recommendations in this Plan. The key actions are listed in Table 5-1. The timeline for the action steps is meant as a general guide and can be modified as necessary.

*Table 5-1. Key Steps to Implementation*

Action	Description	Stakeholder	Timeline
Adopt the Aberdeen Comprehensive Bicycle and Pedestrian Plan	Present the Plan to the Aberdeen Board of Commissioners for adoption.	Board of Commissioners and Town Staff	Summer 2022
Amend Moore County CTP	Amend Moore County Comprehensive Transportation Plan (CTP) to incorporate recommended projects from this Plan into the CTP.	Board of Commissioners, Town Staff, Moore County	Summer 2022
Adopt a sidewalk overlay district	Adopt a sidewalk overlay district to require sidewalk infrastructure be built throughout the Town.	Board of Commissioners and Town Staff	Fall 2022
Create an Active Transportation Advisory Committee (ATAC)	Create a formal advisory committee that will be responsible for overseeing the implementation of the Plan.	Board of Commissioners and Town Staff	Winter 2023

Action	Description	Stakeholder	Timeline
Strengthen partnerships with Triangle Area Rural Planning Organization (TARPO) and NCDOT Division 8	Hold an initial meeting with the stakeholders to provide an overview of the Plan’s recommendations and identify opportunities for collaboration.	TARPO, NCDOT Division 8, and Town Staff	Winter 2023/ ongoing
Apply for Watch for Me NC	Apply to participate in NCDOT’s Watch for Me NC campaign to raise awareness and provide educational resources to promote bicycle and pedestrian safety to residents, drivers, and law enforcement.	ATAC and Town Staff	Winter/Spring 2023/ Ongoing
Identify potential funding sources during Town budget planning	Identify potential funding sources for pedestrian programs, projects, and maintenance in the Town’s budget. Begin to accumulate funds that can be used for the local match required for most projects.	ATAC, Board of Commissioners, and Town Staff	Winter/ Spring 2023
Apply for alternative funding sources for the Plan’s projects and programs	Refer to the funding sources identified in this Plan in Appendix D; apply for funds in addition to the STIP process to implement programs and projects. Establish a fund to use for local match requirements.	ATAC and Town Staff	Ongoing
Include requirements for bicycle and pedestrian facilities in Town ordinances and policies	Draft amendments to Town ordinances and policies following the recommendations of this Plan and NCDOT’s Complete Street Policy for active transportation infrastructure in existing and new development.	Board of Commissioners, and Town Staff	Spring/ Summer/ Fall 2023
Coordinate with Active Routes to School Coordinator	Begin meeting with the Active Routes to School Coordinator to establish and develop policy for implementation and/or training or programs for Aberdeen’s schools.	ATAC, Town Staff, NCDOT, NC Division of Public Health	Summer/ Fall 2023
Partner with local artists, businesses, and the parks department	Partner with local artists, businesses, and the parks department to work on placemaking projects.	Local artists, art organizations, and Town Staff	Winter 2023
Prepare the Aberdeen Comprehensive Bicycle and Pedestrian Plan Annual Report/Memo	Prepare the first Aberdeen Bicycle and Pedestrian Plan Annual Report or memo assessing progress made annually using the performance and evaluation measures included in this Plan.	ATAC and Town Staff	Spring 2024

## 5.2 Project Development Strategy

The development process to prepare for a project's construction involves six key components described below. This strategy can be used to implement infrastructure projects proposed in this Plan. When applicable, each component of the strategy will incorporate action steps described in Table 5-1, demonstrating how Town officials can implement the project through the following:

- Identification of funding source(s)
- Public involvement
- Feasibility Study (right-of-way availability and needs)
- Engineering and design
- Analysis of affected property owners
- Design-level cost estimates

The project development process will vary depending on whether the project is on-road or off-road on a new location. Roadway re-striping and traffic calming measures, such as speed tables, are on-road improvements typically constructed within the road right-of-way. However, adding sidewalks and bicycle facilities may involve obtaining additional right-of-way and/or easements from adjacent property owners.

### Identification of Funding Sources

Funding for bicycle and pedestrian infrastructure projects needs to be identified early in project development. Many funding options are presented in Section 5.3 of this Plan. Relevant action steps include the following:

- Coordinate with TARPO to include infrastructure projects in the regional planning process
- Align with Town budget planning
- Apply for alternative funding sources for the Plan's projects and programs
- Partner with North Carolina Department of Commerce for grants and technical assistance
- Form public-private partnerships

### Scoping Report/Feasibility Study

Regardless of whether the proposed facility is on-road or off-road, the project will require a project scoping report (part of express designs) or a feasibility study (usually part of large corridor projects). A project scoping report or feasibility study or limited feasibility analysis would likely be done for each proposed project, a small group of inter-related projects, or an entire project corridor. The study will examine the utility and right-of-way issues associated with a proposed facility and provide concept plans, profiles, and high-level cost estimates. The study will determine utility constraints, and if right-of-way acquisition is necessary for the project. The study should be conducted in consultation with NCDOT when occurring within an NCDOT right-of-way.

Some of the bicycle and pedestrian projects proposed in this Plan would be on-road facilities within NCDOT rights-of-way that require coordination with NCDOT. On NCDOT roads in the Town, roadway re-striping to reallocate road space has the potential to be accomplished cost-effectively through the division's resurfacing projects. As identified in the key action steps table, coordination with NCDOT Division 8 should be initiated following the adoption of this Plan. There may be opportunities to include pedestrian facilities proposed by this Plan in road repaving and widening projects. An important role for the ATAC would be to monitor the NCDOT Division 8 resurfacing schedule. This could be accomplished



through arranging quarterly check-ins with the Division Operations and Maintenance personnel to determine upcoming resurfacing plans or coordinating with TARPO. Although NCDOT communicates with local municipalities concerning upcoming resurfacing plans and the 2019 Complete Streets Policy ensures pedestrian plans be considered in resurfacing projects, coordination with NCDOT is recommended to ensure projects in this Plan can be implemented through resurfacing.

Project scoping reports or a feasibility study could require coordination at multiple levels from the Town to NCDOT. The following actions would assist in coordinating and conducting feasibility studies:

Adopt the Aberdeen Bicycle and Pedestrian Plan

- Strengthen partnerships with Moore County and TARPO
- Coordinate with NCDOT Division 8
- Coordinate with TARPO to include infrastructure projects in the regional planning process and in the CTP
- Include in Town budget planning
- Develop partnerships with local and regional businesses to help fund wayfinding, arts, and streetscape elements

## Engineering and Design

In the engineering and design phase, concepts developed in the feasibility study will be further developed and advanced using more in-depth engineering to develop a preliminary design. During this phase additional, more specific information on right-of-way and utility constraints will be developed. As with the feasibility study, the planning and design phase should be conducted in consultation with NCDOT if the project falls within an NCDOT right-of-way. Because engineering and design follow feasibility studies closely, many applicable action steps are the same:

- Coordinate with NCDOT Division 8
- Coordinate with TARPO to include infrastructure projects in the regional planning process
- Align efforts with Town budgeting and planning

## Analysis of Affected Property Owners

It is best to develop projects within existing town or NCDOT right-of-way to minimize right-of-way acquisition and costs. Typically, pedestrian infrastructure projects, including those in this Plan, utilize existing roadways, sidewalks, and rights-of-way, as the acquisition of private property would reduce the feasibility of the project. Shared use paths are an example of a project that typically requires right-of-way acquisition. However, if a project requires the acquisition of additional rights-of-way, the feasibility study, engineering, and design identify property owners who could be impacted by a project's alignment and construction. Once those property owners are identified, town officials should coordinate with NCDOT (if on NCDOT road) on the process to initiate contact with impacted property owners and acquire right-of-way.

As part of the project selection process, this Plan considered available right-of-way and based on high-level analysis, only proposes projects that would fit within the existing right-of-way. Bicycle and pedestrian projects that could require the acquisition of rights-of-way typically include those that are not using existing roadways or sidewalks.

## Design-level Cost Estimates

A critical component of a project's engineering and design is developing the design-level cost estimates for proposed project alternatives. Detailed cost estimates allow the Town Board of Commissioners to evaluate alternatives, present options to the public, receive public input, and ultimately decide on the alternative that best fits the Town's goals and budget. Design-level cost estimates are generated by the project engineers tasked with designing the project alternatives. Cost estimates include the following details, at a minimum:

- Roadway/path/sidewalk construction
- Utility construction or relocation
- Right-of-way acquisition
- Contingencies that could arise during project construction

## Public Involvement

This is a critical component for soliciting community input on the location, design, and function of the proposed facility. In addition, public involvement is critical in forming partnerships with local advocacy organizations and educating the community about the overall benefits of active transportation. Public involvement should be included in all phases of project development. Practical action steps include the following:

- Form an Active Transportation Advisory Committee (ATAC)
- Carry out programs that educate residents on the health benefits of active transportation
- Conduct wayfinding and traffic calming studies
- Participate in Watch for Me NC

## 5.3 Funding Sources

This section discusses the state funding process and other potential funding sources. Funding for bicycle and pedestrian projects will likely not come from a single source, and instead will need to be combined with several funding sources that can be used for a variety of activities, including the following: feasibility studies, planning, design, implementation, and maintenance. Although funding is available from outside sources, it is highly recommended that the Town establish a source of local matching funds for potential grants. Even small amounts of local funding are essential for matching and leveraging outside sources. Local matching funds can be achieved through allocations to a reserve fund from the capital budget. In addition, many grants allow in-kind matching (e.g., local staff time).

### State Funding Process for Transportation Improvements

In June 2013, the North Carolina General Assembly overhauled the process for funding state transportation projects with the Strategic Transportation Investments law (House Bill 817). This law establishes the Strategic Mobility Formula to allocate funds through a competitive process based on quantitative criteria and local input. The formula is intended: "to maximize North Carolina's existing transportation funding to enhance the state's infrastructure and support economic growth, job creation and high quality of life." This formula is applied in creating the STIP, which is NCDOT's ten-year transportation improvement plan for the state. The STIP is updated every two years and includes projects across six transportation modes: highway, aviation, bicycle/pedestrian, public transportation, ferry, and rail.

Active transportation projects that are submitted through the NCDOT project prioritization process as part of a roadway project must meet the following requirements based on the latest round of prioritization (Prioritization 6.0):

- Minimum project cost of \$100,000 for stand-alone pedestrian (or bicycle) projects (this does not apply for active transportation elements that are part of a roadway project).
- According to the 2019 Complete Streets Policy, if the bicycle and pedestrian facility is included in an adopted local plan, the Town will not be responsible for the cost. If the pedestrian project component is not included in a plan, the Town will have to provide a local match.
- Must be included in an adopted plan (pedestrian plans, bicycle plans, greenway plans, Safe Routes to School action plans, comprehensive transportation plans (CTPs) and long-range transportation plans)
- Right-of-way must be secured prior to receiving federal construction funding
- The formula funds projects according to the three following categories:
  - Division Needs (30 percent)
  - Regional Impact (30 percent)
  - Statewide Mobility (40 percent)

Bicycle and pedestrian projects that are independent of larger roadway projects are only funded through the Division Needs category. Projects in this category compete equally against all six transportation modes within the division. Selection is based on 50 percent on the quantitative score and 50 percent on local input. Local input is split evenly between the NCDOT division and Metropolitan Planning Organization or Rural Planning Organization (RPO). The public may comment on the local input point assignment, which the Division Engineer will review prior to final local input point assignment. TARPO also provides a public comment period.

### Powell Bill Funds

The Town may use its allocation of Powell Bill funds from the state to fund pedestrian (and bicycle) infrastructure projects. These funds are generated by the motor fuel sales tax and appropriated annually by the state to qualifying municipalities. According to state statutes, municipalities may use Powell Bill funds to resurface, repair, or widen streets, or for the planning, construction and maintenance of bikeways, greenways, or sidewalks. The use of these funds would be at the discretion of the Town Board.

### North Carolina Main Street and Rural Planning Center

The North Carolina Main Street and Rural Planning Center works in regions, counties, cities, towns, downtown districts, and in designated North Carolina Main Street communities to inspire placemaking through building asset-based economic development strategies that achieve measurable results such as investment, business growth, and jobs. It provides towns across the state with technical assistance for downtown revitalization through its Downtown Associate Community Program.

The center selects communities every other year via a competitive application process. Municipalities with an identifiable traditional downtown business district and a certified population under 50,000 not already designated as an active Main Street or Small-Town Main Street community are eligible to apply to the Center for services under the Downtown Associate Community Program. Selected communities will receive up to three years of downtown revitalization technical assistance services from the center and may have the opportunity to move up to Main Street designation upon successful completion of the



program. This could be a potential funding source for the pedestrian, active transportation, and streetscape improvements in the Town of Aberdeen.

### Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant

The RAISE Transportation Discretionary Grant program (formerly BUILD) is a federal program by the United States Department of Transportation (USDOT) to fund projects that invest in road, rail, transit, and port projects that promise to achieve national objectives. The eligibility requirements of RAISE allow project sponsors at the state and local levels to obtain funding for multimodal, multijurisdictional projects that are more difficult to support through traditional USDOT programs. RAISE can provide capital funding directly to any public entity, including municipalities, counties, port authorities, tribal governments, Metropolitan Planning Organizations, or others in contrast to traditional federal programs which provide funding to very specific groups of applicants (mostly state departments of transportation and transit agencies). Bicycle (and pedestrian) projects are eligible for funding under the RAISE program.

RAISE grants are competitive and are selected based on merit criteria, including safety, environmental sustainability, and quality of life. The application and award processes occur annually. The maximum award amount is \$25 million. In urban areas, the award minimum is \$1 million while there is no minimum in rural areas.

### Reconnecting Communities

The Bipartisan Infrastructure Law creates a first-ever \$1 billion program at the Department of Transportation to reconnect communities divided by transportation infrastructure – particularly historically disadvantaged communities too often nearly destroyed or cut in half by a highway. This new competitive program will provide dedicated funding to state, local, Metropolitan Planning Organizations, and tribal governments for planning, design, demolition, and reconstruction of street grids, parks, or other infrastructure to address these legacy impacts. Applications will open in the second quarter of 2022.

### Safe Streets and Roads for All

This new \$5 billion competitive grant program at the Department of Transportation will provide funding directly to and exclusively for local governments to support their efforts to advance “vision zero” plans and other complete street improvements to reduce crashes and fatalities, especially for cyclists and pedestrians.

### Grants for Energy Efficiency and Resilience Code Adoption

This Department of Energy program will provide \$225 million to state energy agencies, in partnership with local building code agencies, codes and standards developers, utilities, and other entities, to enable sustained, cost-effective implementation of updated building energy codes to save customers money on their energy bills. Applications for funding are expected to be open by the end of 2022.

### National Endowment for the Arts

The National Endowment for the Arts’ Our Town program is a creative placemaking initiative that would likely be appropriate for the Town of Aberdeen, given the Town’s focus on placemaking. The grant requires “a partnership between a local government entity and nonprofit organization, one of which must be a cultural organization; and should engage in partnership with other sectors (such as agriculture and food, economic development, education and youth, environment and energy, health, housing, public safety, transportation, and workforce development)” (NEA, 2020). Additional information regarding specific grant requirements and the application can be found on the National Endowment for the Arts’ website: <https://www.arts.gov/grants/apply-grant/grants-organizations>.

## Other Funding Sources

The Town of Aberdeen may consider alternate funding sources to augment state funds for pedestrian projects, which are limited and competitive. The programs listed below may be used to fund entire projects or be directed towards covering the cost of spot improvements like crosswalks or amenities such as benches and signage. Note that many of the federal funding sources are distributed by NCDOT through the prioritization process and are not directly attributed to municipalities or RPOs. Additional and more detailed information concerning what these funds can be used for, the required local match, and other characteristics is included in Appendix D: Funding Sources.

### *Federal Funding Sources*

- Congestion Mitigation and Air Quality Improvement
- Highway Safety Improvement Program
- National Priority Safety Program (Section 405)
- State and Community Highway Safety Grant Program (Section 402)
- Surface Transportation Block Grant Program
- Transportation Alternatives

### *State Funding Sources*

- Clean Water Management Trust Fund
- Land and Water Conservation Fund
- Parks and Recreation Trust Fund
- Recreational Trails Program
- Safe Routes to School

### *Local Funding Sources*

- Capital Reserve Fund
- Fees (town wide/local)
- General Obligation Bonds
- Special Tax District
- Tax Increment Financing

### *Nonprofit Funding Sources*

- Blue Cross Blue Shield of North Carolina Foundation
- Kate B. Reynolds Charitable Trust
- North Carolina Community Foundation
- Robert Wood Johnson Foundation

## *Community Crowdfunding*

In the last several years the internet has revolutionized fundraising. This new form of fundraising, called crowdfunding enables people all over the world to start a fundraising effort and provides an easy mechanism for others to make donations. Platforms such as Kickstarter and Indiegogo are online communities that act as funding platforms for a diverse range of projects. Individuals or organizations post projects for a nominal fee and individuals make contributions via credit card. This type of fundraising is likely to be a minor source, but might be useful for funding spot improvements, such as crosswalk markings or benches.

**Kickstarter:** Crowdfunding platform to help artists, musicians, filmmakers, designers, and creators fund new ideas and projects. <https://www.kickstarter.com/>

**Indiegogo:** Similar to the successful crowdfunding platform, Kickstarter, Indiegogo is more locally oriented and trends toward civic-based projects. <http://www.indiegogo.com/>

## 5.4 Performance and Evaluation Measures

To evaluate the progress and effectiveness of the Aberdeen Bicycle and Pedestrian Plan, Table 5-2 lists evaluation criteria and examples of achieved progress that the ATAC and Town Board of Commissioners can use. These criteria and milestones are based on the goals and objectives of this Plan. The table is intended to serve as a general guide—the ATAC should tailor these evaluation criteria to the community by adopting more specific, locally applicable quantitative metrics.

The evaluation of the Plan should occur annually and be published in the form of a memo or report made available to the residents of the Town of Aberdeen. The report should detail the progress made to date and the priorities for the coming year. This annual report will help to demonstrate the benefits of bicycle and pedestrian infrastructure and programs, as well as generate further support for the ongoing work of the ATAC.



Table 5-2. Implementation Evaluation Criteria

Goals	Performance Evaluation	Examples of Progress Achieved
Identify and develop bicycle and pedestrian programs and infrastructure projects to improve safety and enhance connectivity within the Town of Aberdeen that complement the town’s focus on the natural environment and public space.	Miles of bicycle and pedestrian facilities constructed and number of spot improvements	Miles of bicycle and pedestrian facilities constructed in a specific period of time (e.g., 1 mile within 5 years)
	Number of programs implemented to encourage walking and safety	Participation in the Watch for Me NC program annually or bi-annually
	Number of ATAC meetings held	ATAC meets quarterly
Prioritize key pedestrian infrastructure projects identified in Section 4.4 to improve mobility, increase safety, and encourage economic development.	Compliance of pedestrian facilities with ADA standards	Number of curb cuts updated to meet ADA standards
	Reduction in speeding vehicles along the roadway	Reduced number of speeding cars recorded (e.g., 20 percent reduction in speeding vehicle recording following upgrades to NC 87)
	Number of local stores along NC 87 that can be accessed from pedestrian facilities	Increase number of stores that are accessible from shared-use paths (e.g., 5 additional local businesses adjacent)
Provide wayfinding for pedestrian navigation between community origins and destinations, including local parks and other community resources.	Implementation of wayfinding system	Town adopted wayfinding design and strategy.
	Number of wayfinding signs located within Aberdeen	Wayfinding signs that direct tourists to the community resources
Recognize and promote the health, economic, safety, and mobility benefits of active transportation.	Consecutive miles of pedestrian facilities to encourage walking to resources as well as walking recreationally	Establishment of a walkable “exercise loop” for recreational purposes that connects the various public spaces in Aberdeen
Educate the community as to the benefits of pedestrian activity, applicable rules, and regulations.	Number of programs, campaigns, or events annually in the community meant to encourage pedestrian activity	Number of programs or partnerships annually
Coordinate with Triangle Area RPO and NCDOT to implement the recommendations of the Plan.	Successful adoption the Aberdeen Bicycle and Pedestrian Plan	Plan is approved by NCDOT and the Triangle Area RPO
	Implementation of projects proposed in the Aberdeen Bicycle and Pedestrian Plan	Number of programs and infrastructure projects implemented following the adoption of the Plan

## REFERENCES

Centers for Disease Control and Prevention (2016), North Carolina State Nutrition, Physical Activity, and Obesity Profile:

<https://www.cdc.gov/nccdphp/dnpao/state-local-programs/profiles/pdfs/north-carolina-state-profile.pdf>

FHWA, Pedestrian Safety Guide for Transit Agencies:

[https://safety.fhwa.dot.gov/ped\\_bike/ped\\_transit/ped\\_transguide/ch3.cfm](https://safety.fhwa.dot.gov/ped_bike/ped_transit/ped_transguide/ch3.cfm)

Natural Resources Conservation Service, Bioswales:

[https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs144p2\\_029251.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_029251.pdf)

AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities:

[http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07\(263\)\\_FR.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07(263)_FR.pdf)

Indiegogo: <http://www.indiegogo.com/>

Kickstarter: <https://www.kickstarter.com/>

Let's Go NC!

[www.connect.ncdot.gov/projects/BikePed/Pages/LetsGoNC.aspx](http://www.connect.ncdot.gov/projects/BikePed/Pages/LetsGoNC.aspx)

National Endowment for the Arts':

<https://www.arts.gov/grants/apply-grant/grants-organizations>

North Carolina Bicycle and Pedestrian Laws:

[www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx](http://www.ncdot.gov/divisions/bike-ped/Pages/bike-ped-laws.aspx)

North Carolina Department of Transportation Complete Streets Planning and Design Guidelines:

[http://www.pedbikeinfo.org/pdf/PlanDesign\\_SamplePlans\\_CS\\_NCDOT2012.pdf](http://www.pedbikeinfo.org/pdf/PlanDesign_SamplePlans_CS_NCDOT2012.pdf)

North Carolina Division of Motor Vehicles:

[www.ncdot.gov/dmv](http://www.ncdot.gov/dmv)

Open Street Events:

[www.openstreetsproject.org](http://www.openstreetsproject.org)

Safe Routes to School:

<https://www.ncdot.gov/bikeped/safetyeducation/safeRoutesToSchools/>

Smart Growth Codes:

<https://www.epa.gov/smartgrowth/codes-support-smart-growth-development> and <https://formbasedcodes.org/>

WalkBikeNC North Carolina Statewide Pedestrian and Bicycle Plan:

<https://altaplanning.com/wp-content/uploads/WalkBikeNCPlanChapterslowres.pdf>

Watch for Me NC at:

<http://www.watchformenc.org/>

## PHOTO CREDITS

Bioswale:

<https://www.flickr.com/photos/87297882@N03/7994695423>

Permeable Pavement:

<https://www.flickr.com/photos/131402048>

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# APPENDIX A: COMMITTEE AND PUBLIC INVOLVEMENT

## Steering Committee Meeting #1

*Agenda Packet*

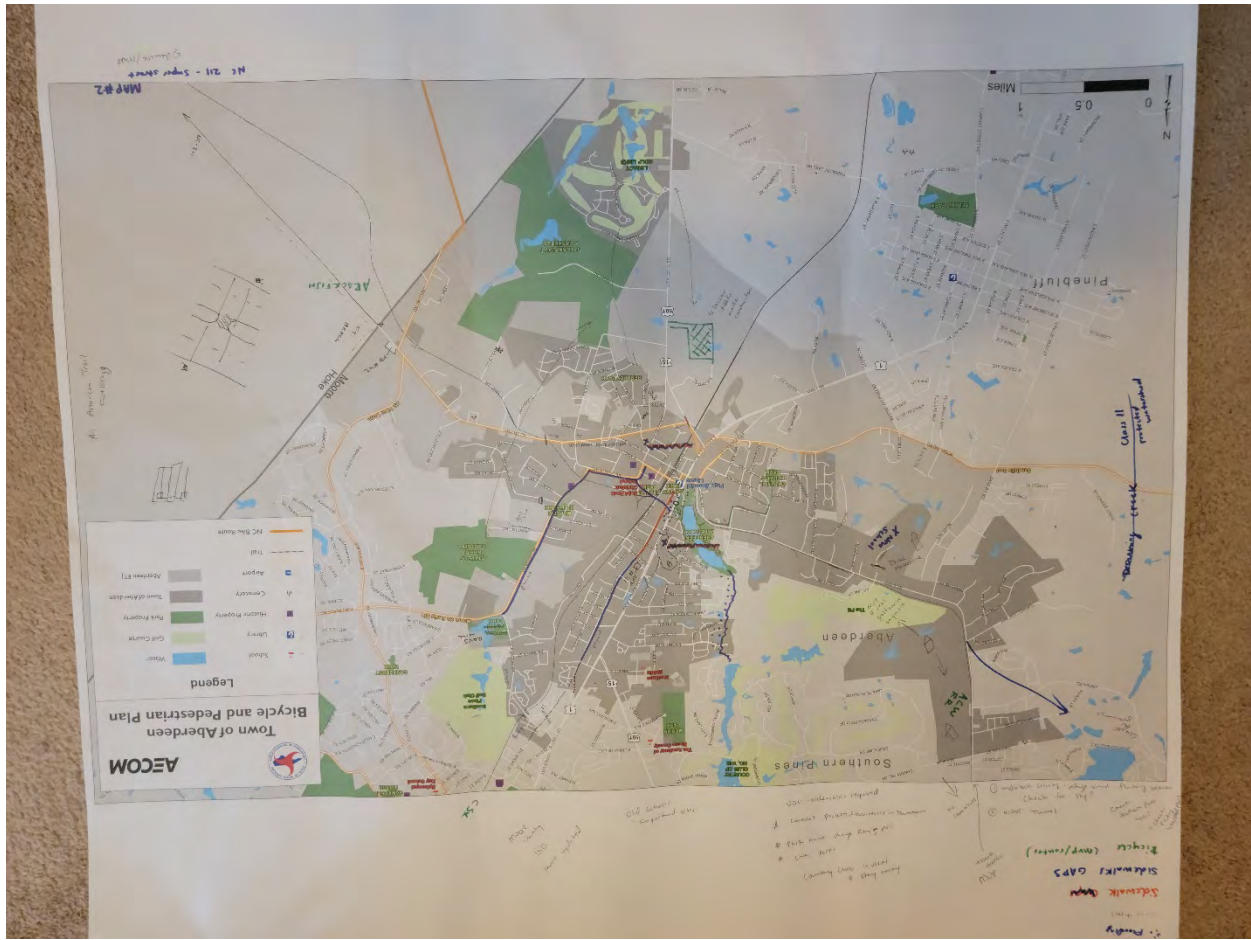
**Town of Aberdeen**  
**NCDOT Bicycle and Pedestrian Plan**  
Town Hall Building

### **Agenda – First Steering Committee Meeting**

August 11, 2021 | 6:00 – 7:30 PM

- 6:00 PM      INTRODUCTIONS**
- A) Introductions**  
Town Staff, Steering Committee, NCDOT, and the AECOM Team.
  - B) Meeting Agenda**  
Introduce the project and the purpose of the meeting.
- 6:10 PM      PROJECT OVERVIEW**  
Discuss the project, including the role of the steering committee, the project vision and goals, and the types of projects that may be recommended as part of the planning process.
- 6:30 PM      WORK SESSION**  
The steering committee will be asked to participate in a working session using maps that are intended to lay the groundwork for developing projects that will be presented in the plan. The committee will be asked to identify bicycle and pedestrian opportunities, constraints, and community features or destinations. They will also be asked to identify specific bicycle and pedestrian routes or connections in the town.
- 7:30 PM      ADJOURN THE STEERING COMMITTEE MEETING**

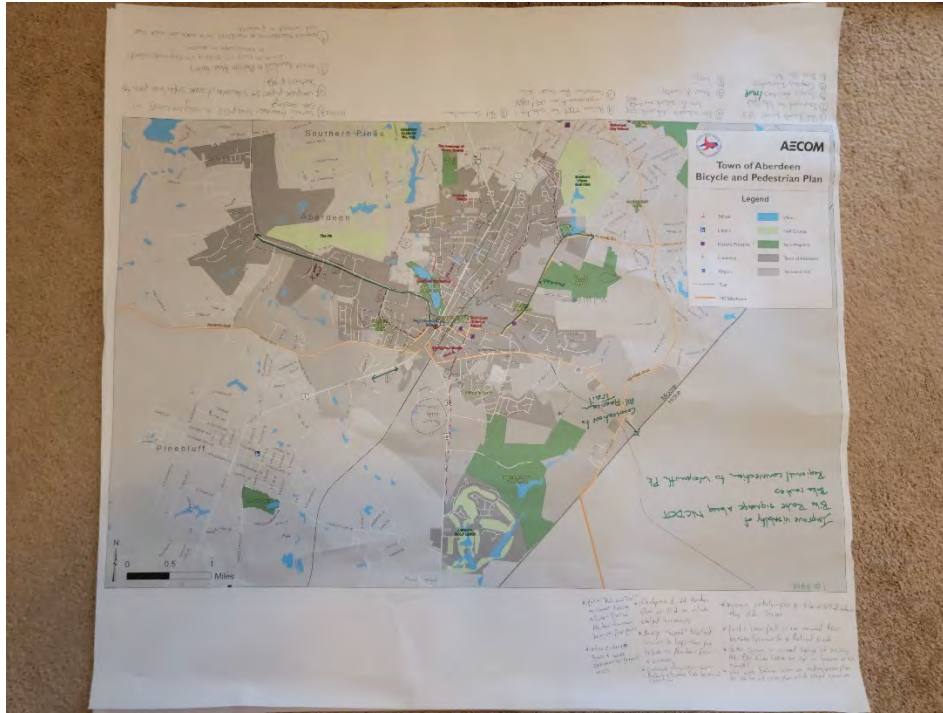
Exercise Outputs



# Workshop Maps



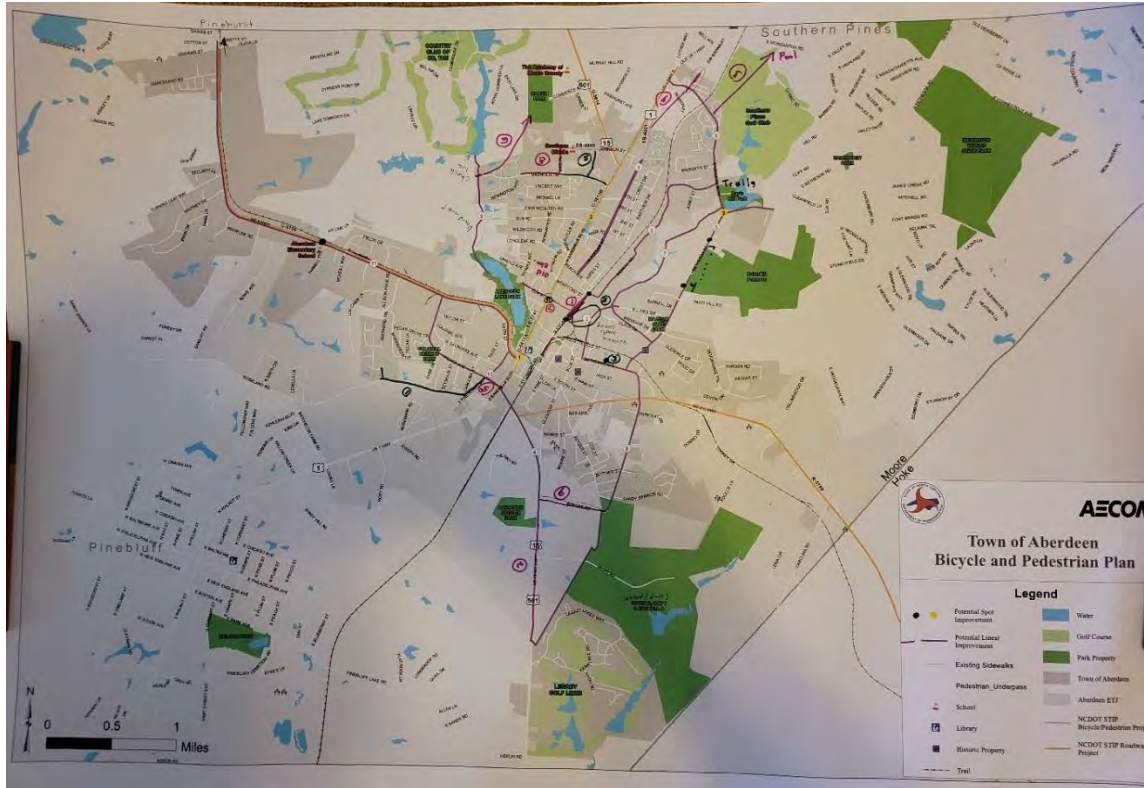




# Steering Committee Meeting #2

Exercise Outputs (including public meeting input)







# Steering Committee Meeting #3

## Handout

Map Label Project Street Name From To

Map Label	Project	Street Name	From	To
6*	Pave ment tra Kings (later on) to share the road signage on Poplar Street	Poplar Street	South Street	US 1
10	Bicycle trail by along Bethesda Rd from Bethesda Ave to the hills	Bethesda Rd	Bethesda Ave	Town limits
33*	Rose and Road paved shoulders	Rose and Rd	Send Rd	US 1
34*	Pinehurst Street paved shoulders	Pinehurst St	Rose and Rd	NC 5
35*	US 1 Mixed Use Path	US 1	Rose and Rd	NC 5
36*	US 16501 paved shoulders	US 16501	US 1	NC 211
37*	NC 5 and South Street shared lane markings	NC 5 and W South Street	Pinehurst St	Poplar St
38*	W Main Street shared lane markings	W Main St	Poplar St	N Sycamore St
39*	E Main Street Bicycle Lane	E Main St	N Sycamore St	Blue St
40*	Blue Street/Bethesda Avenue shared lane markings	Blue St and Bethesda Ave	E Main St	Bethesda Rd
41*	NC 211 paved shoulders	NC 211	US 15/501	Town limits



Please note that projects marked with an asterisk (\*) in the following tables were added since the last meeting.

Map Label Recommendation Street 1 Street 2 Recommended Improvement

Map Label	Recommendation	Street 1	Street 2	Recommended Improvement
1	Recessed crosswalks and signals across US 1 at 5/501 and South St	US 1/15/501	NC 5/South St	Recessed signals and high visibility crosswalks
2	Succession crossing opportunities across US 1 between Maple St and 15/501	US 1/15/501 between US 1/5/501 and Maple Street		
3	Intersect on safety improvements	South Street	Bethesda Rd	
4	Lighting along Bethesda Rd	Bethesda Rd		Recessed lighting
5	Lighting along Bethesda Ave	Bethesda Ave		Recessed lighting
6	Recessed intersection improvements	NC 211	Bethesda Ave	Recessed signals and crosswalks
7	Recessed intersection improvements	US 15/501	Highway 16501	Recessed signals and crosswalks

Map Label Project Street Name From To

Map Label	Project	Street Name	From	To
3	Side walk mixed use path on Saunders Blvd	Saunders Blvd	US 1	Bethesda Rd
5	Side walk along Myrtle St, Main St and Auburn St	Myrtle St, Main St, Auburn St	US 1/15/501	Lig. cycle, Jr
6	Extend sidewalks on both sides of Poplar St from Poplar Ave to west planned junction at Providence Dr (R-4001)	Poplar Street	Providence Ave	Johnson St/ Providence Dr
7	Side walk mixed use path along Midway Rd	Midway Road	N Sycamore St	Sejunction Blvd
11	Elm St sidewalk extends from Thomas Ave to Sycamore St	Elm Street	Thomas Avenue	N Sycamore Street
14	Side walk on Saunders Ave, Wilder Ave and Pinehurst St (Access to Colonial Heights Park)	Saunders Ave, Wilder Ave, Pinehurst St	NC 5	NC 5 near Hanks area
16	Side walk along Bethesda St from Elm St to NC 211	Bethesda St	Elm Street	NC 211
18	Rose and Road	Pinehurst Street, Rose and Road and Shepherd Trail	Highway 16501	Wilmington Ave
18	Side walk connector on Pine Dale Rd	Pine Dale Rd	US 15/501	Bethesda St
28*	Midford Street Side walk Connector	Midford St	US 15/501	N Sycamore Street
29*	N Sycamore Street Side walk Connector	N Pine St	E Main St	E Maple St
30*	S Sycamore Street Side walk Connector	S Sycamore St	W South St	Terminus
31*	Park Lane Side walk Connector	Park Dr	Wilder Ave	Rose and Rd
32*	Martin Farms Sidewalk Trail		Martin Farms Development	

Topical Multi-Use Path Recommendation

Map Label	Multi-Use Path / Greenway Recommendation	From	To
1	Off-road connector between Main Poplar St to Prospect Prospect Dr	Poplar St	Prospect St
2	Mixed-use path connector between Main Park and proposed Lake Aberdeen Trail	Main Park	Proposed Aberdeen Creek Trail (adjacent to 4)
4	Aberdeen Creek trails	Lincoln St	Aberdeen town limits (Dyna L - Downers St)
9	Mixed use path or NCS from US 19/501 to Town limits (US 758 improvements currently include sidewalk)	US 19	Aberdeen town limits (Dyna L - Downers St)
9	Greenway to Rays Mill Pond (us 19 creek and sewer easement)	EL Livez Drive	Rays Mill Pond
10	Mixed-use path on Sycamore St	Military Rd	Proposed mixed use path (adjacent to 19)
10	Down town walk to Blue Farm Greenway	Sycamore St	EL Livez Dr
17	Legacy Connector	Down town to Milico on Blue Farm Greenway (adjacent to 10)	US 19/501 and Legacy Lakes Way
19	Mixed use path (US 19/501)	US 19	The Academy of Music County
20*	Rehoboth Hills Trail	Rehoboth Rd	Into high proposed development
21*	Old Wooded Trail	NC 21	Into high proposed development
22*	Albion Elementary Trail	US 19	Aberdeen Lake Park
22*	Down town Elementary Trail	Knight St	Wagon Way
24*	Park Hill Trail	Down town Elementary Trail (adjacent to 22)	One Down Street
25*	One Down Street Trail	Park Hill Trail	Delmar Rd
26*	Rays Mill Park Trail	Wagon Way	Wagon Way's Mill Park
27*	Aberdeen Sportsplex Trail	US 19/501 north of	Aberdeen Sportsplex

Please provide additional comments on the proposed projects:

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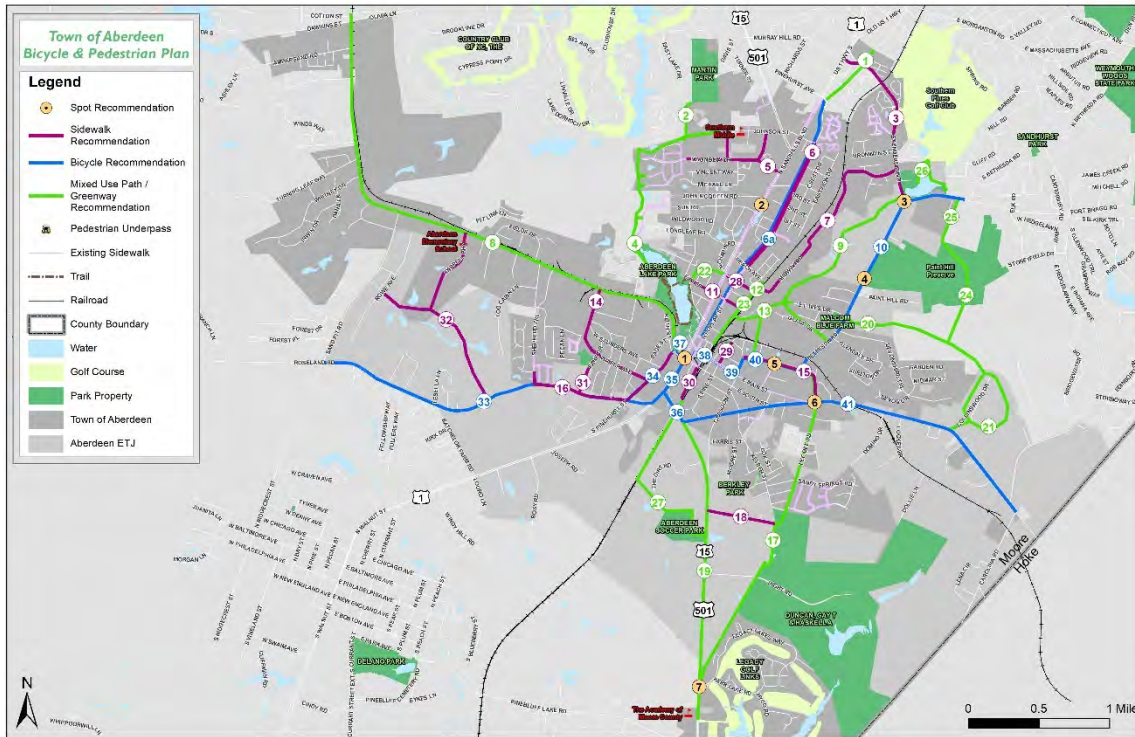
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Please rank the weight of the factors that will be used to prioritize the projects. Use 2-7 with 2 being the most important factor. Stakeholder input (including steering committee and public input) will be the most important factor considered.

Prioritization Factors	Weight of Factors	Variables
Stakeholder/Public Input		<ul style="list-style-type: none"> <li>Number of requests (public outreach exercises)</li> <li>Steering Committee and public comments</li> <li>Public involvement ranking (public outreach exercises)</li> </ul>
Constraints		<ul style="list-style-type: none"> <li>Available ROW</li> <li>Utility relocation</li> <li>Order of magnitude cost (based on estimate)</li> </ul>
Safety		<ul style="list-style-type: none"> <li>Public involvement (public outreach exercises)</li> <li>Total bicycle/pedestrian crashes</li> <li>Posted speed limits</li> <li>Presence of paved shoulders</li> <li>Presence of sidewalks</li> </ul>
Existing Conditions		<ul style="list-style-type: none"> <li>Proximity to community services</li> <li>Public involvement (public outreach exercises)</li> </ul>
Demand		<ul style="list-style-type: none"> <li>Proximity to existing facilities</li> <li>Public involvement (public outreach exercises)</li> </ul>
Connectivity		<ul style="list-style-type: none"> <li>Connection to existing facilities</li> <li>Public involvement (public outreach exercises)</li> </ul>
Equity		<ul style="list-style-type: none"> <li>Public involvement (public outreach exercises)</li> </ul>





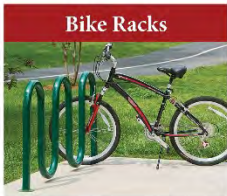
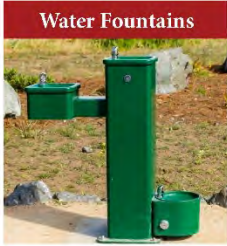
Exercise Outputs (including public meeting input)







Potential Bicycle and Pedestrian-Friendly Features



## Bicycle and Pedestrian-Friendly Features



**BICYCLE LANE**  
A marked travel lane along a portion of the roadway that has been designated for preferential or exclusive use for bicyclists via pavement markings.



**SHARED LANE**  
A lane that is open to both bicycle and motor vehicle travel. Shared lanes can be marked with shared lane markings or designated as bicycle boulevards. A shared lane that is at least 14 feet wide allows space so that bicyclists and motorists may travel side-by-side within the same traffic lane.



**BICYCLE PARKING**  
A rack or object provided specifically for the purpose of supporting and enabling a bicycle to be secured when not in use.



**BICYCLE MAINTENANCE**  
A stand, kiosk or repair station provided to the public for self-service bicycle maintenance.



**BICYCLE SIGNAL**  
A traffic control device that assigns right-of-way to bicyclists and controls bicycle movements in mixed traffic to reduce conflict with motor vehicles and/or pedestrians.



**ACCESSIBLE PEDESTRIAN SIGNAL**  
Devices that communicate information about the "walk" and "don't walk" intervals at signalized intersections in non-visual formats to pedestrians who are blind or have low vision.



**HIGH-VISIBILITY CROSSWALK**  
A crosswalk marked with diagonal or longitudinal lines parallel to traffic flow, such as the ladder, continental or bar pair marking pattern.



**LIGHTING**  
High quality and well-placed lighting, including supplementing pedestrian-scale lighting at night-time crossing areas, increases safety and security for non-motorized users.



**PEDESTRIAN SIGNAGE**  
Illumination provided to enhance the safety and comfort of pedestrians and bicyclists. High quality and well-placed lighting increases safety and security for non-motorized users.



**SIDEWALKS**  
The portion of a street or highway right of way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians.



**EQUESTRIAN CONSIDERATIONS**  
Trail corridors with paved and unpaved trails can accommodate multi-users, such as riders with horses, bicycles and pedestrians. Vegetation and distance help separate users and minimize conflicts.



**SIDEPATH**  
A specific type of shared use path facility that is physically separated from the road but located within the roadway right of way.



**SHARED USE PATH**  
A facility which may be used by bicyclists, pedestrians, and other non-motorized users. They are separated from the roadway by an open space or a physical barrier or within an dependent right-of-way. Also known as a "multi-use trail" or "greenway."



**TRAILHEAD**  
A trailhead is the primary access point to a shared use path or trail. It may have parking and other amenities at the terminus.



**PAVED SHOULDER**  
The portion of the roadway contiguous with the travel lanes. Shoulders, where paved and of sufficient width, may be used by bicyclists. Bicycle lane pavement markings may be used and in rural areas, paved shoulders are also used by pedestrians where sidewalk is not present.



**COMPLETE STREETS**  
A policy and infrastructure initiative that mandates streets are designed and operated by all users to enable safe, convenient, and comfortable travel and access for all modes of transportation.



**EDUCATION PROGRAMS**  
Education campaigns can help inform and bring awareness to the skills needed to be safe pedestrians and bicyclists and for motorists to be reminded of applicable laws. Examples include programs such as Watch for Me! NC or local courses offered at schools or libraries.



**POLICY ACTION**  
Policy actions that can additionally encourage bicycle and pedestrian planning include changes to zoning or other local ordinances or regional cooperative agreements.



**ROAD REALLOCATION**  
A technique to modify the number or width of travel lanes to achieve systemic improvements. Variants of reallocation include 4 to 3 lane conversion, reduction, road diet, or reconfiguration to improve safety, mobility, and access for all road users.



**SAFETY TRAINING**  
Training the local police enforcement and residents can reduce bicycle and pedestrian related accidents. Examples include safety patrol programs or a bicycle helmet initiatives.



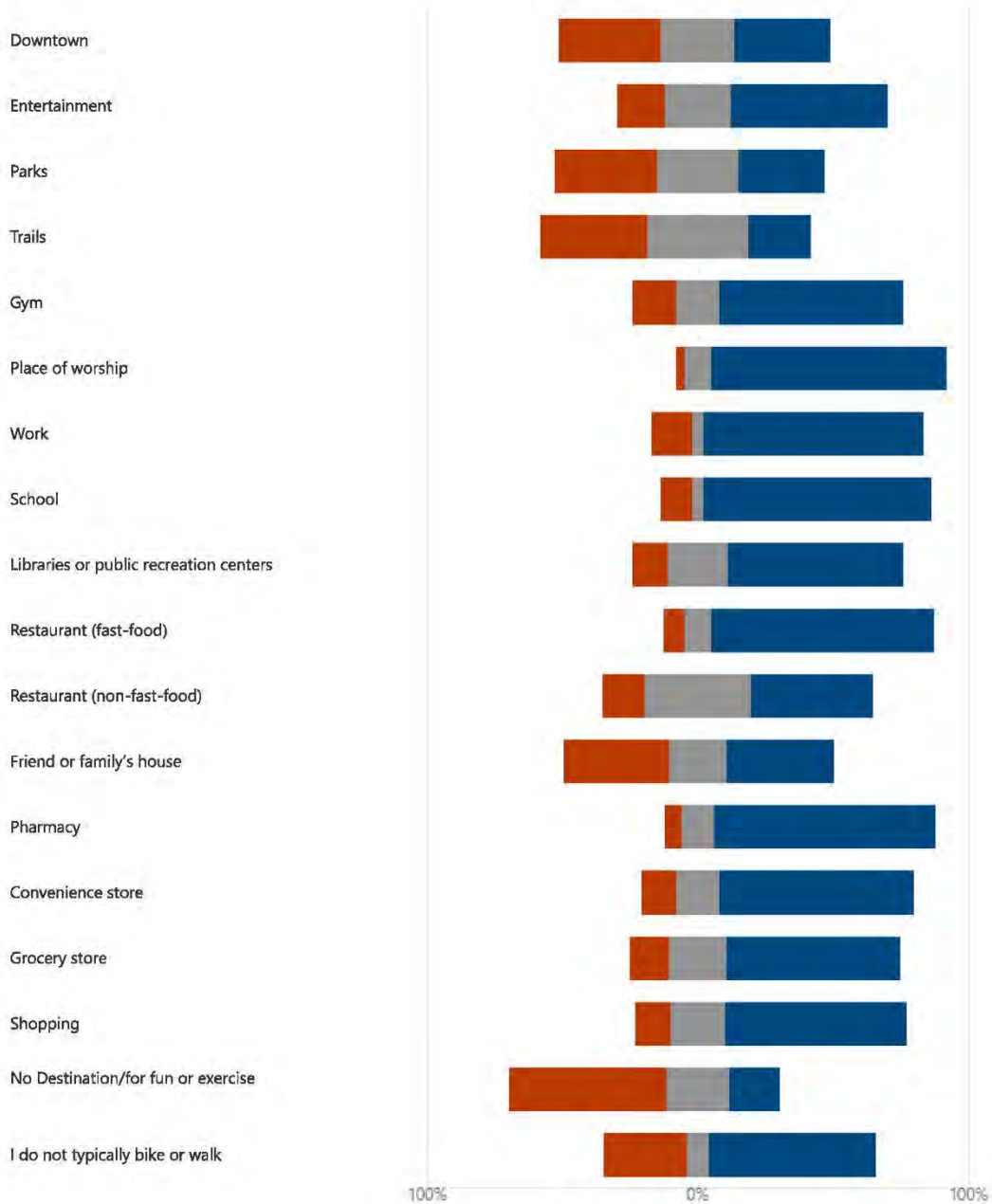


# APPENDIX B: COMMUNITY SURVEY

*Public Survey*

1. What types of destinations do you bike or walk to, and how often do you typically take these trips?

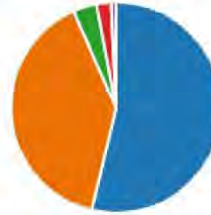
■ 3 or more times per week ■ several times per month ■ less than 1-2 times per month





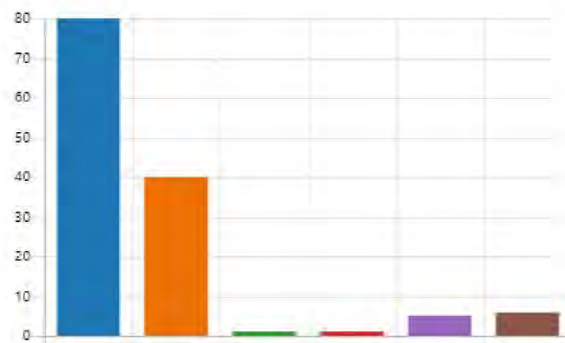
2. In your opinion, how easy or difficult is it to bicycle or walk in Aberdeen? *Please select one.*

● Very difficult	73
● Somewhat difficult	54
● Neither difficult nor easy	5
● Somewhat easy	3
● Very easy	1



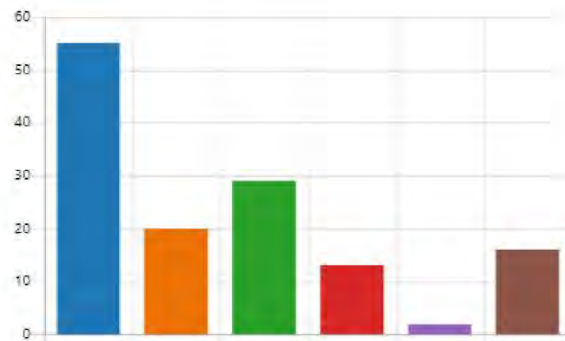
3. What makes it difficult for you to **BIKE** in Aberdeen? *Please select one.*

● Limited availability of bicycle f...	80
● Safety concerns linked to traffi...	40
● Lack of knowledge of how to ...	1
● Insufficient access to bicycles ...	1
● Don't know	5
● Other	6

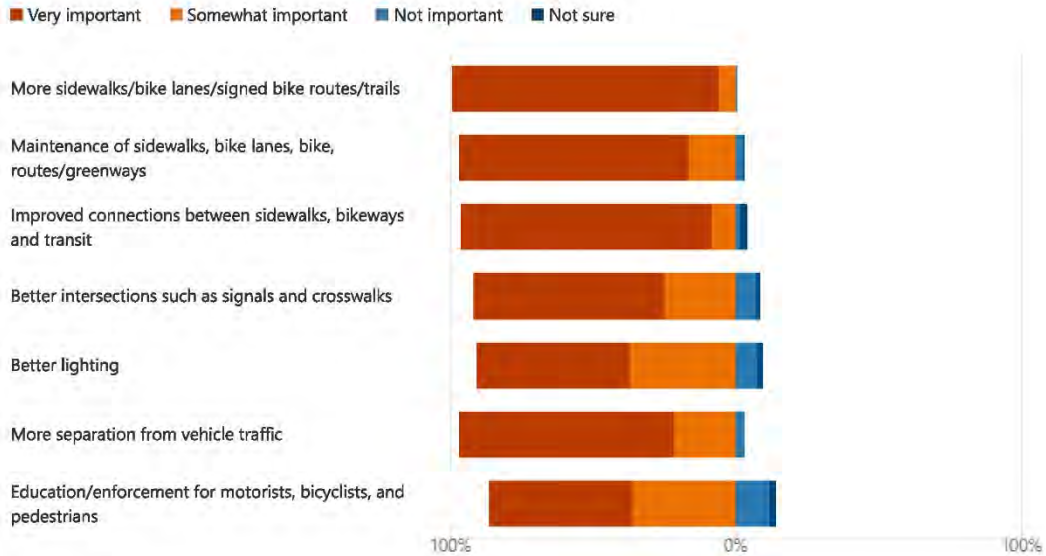


4. What makes it difficult for you to **WALK** in Aberdeen? *Please select one.*

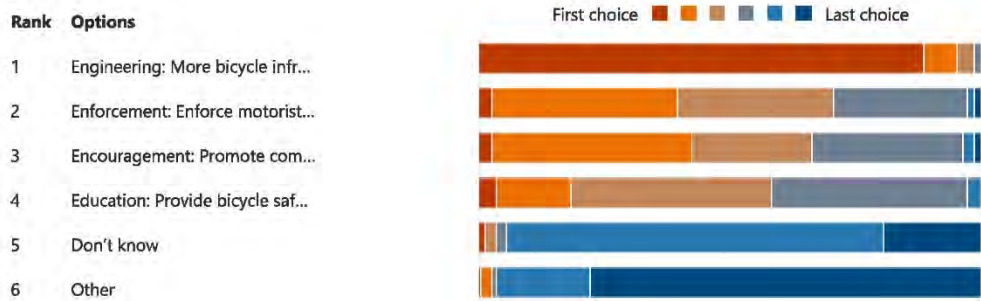
● Poor condition of, or no pede...	55
● Safety concerns linked to traffi...	20
● Sidewalk network does not co...	29
● Poor crosswalk connections ac...	13
● Don't know	2
● Other	16



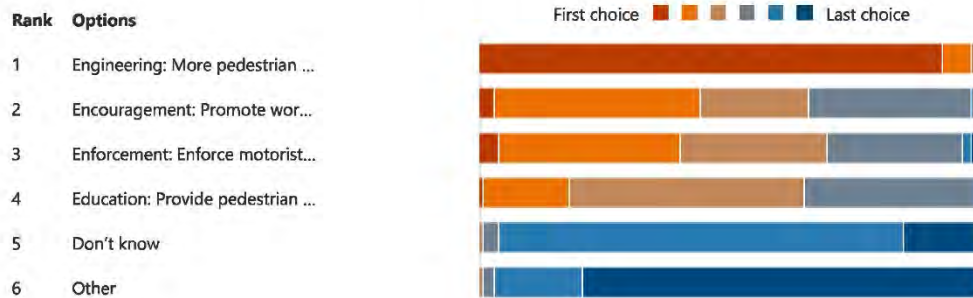
5. How important do you think the following improvements would be in supporting bicycling and walking in Aberdeen?



6. To increase the ease of **bicycling** in Aberdeen, which of these changes would you recommend? Please arrange the following options to show the highest priority at the top and lowest priority at the bottom.



7. To increase the ease of **walking** in Aberdeen, which of these changes would you recommend? Please arrange the following options to show the highest priority at the top and lowest priority at the bottom.



8. In your opinion, which roads/streets are the **least** safe for bicyclists and/or pedestrians in Aberdeen? Please specify which road(s)/street(s), which mode (bicycling/walking), and why.

120 Responses

Latest Responses

"US1"

"Poplar Street!!! Poor lighting and no sidewalks for pedestrians. "

"Bicyclists: US Hwy 1 and NC Hwy 5. Living on Hwy for decades, I have..."

36 respondents (30%) answered **walk** for this question.





9. In your opinion, which intersections in Aberdeen are the **least** safe for bicyclists and/or pedestrians? Please specify which intersection(s), which mode (bicycling /walking), and why.

Latest Responses

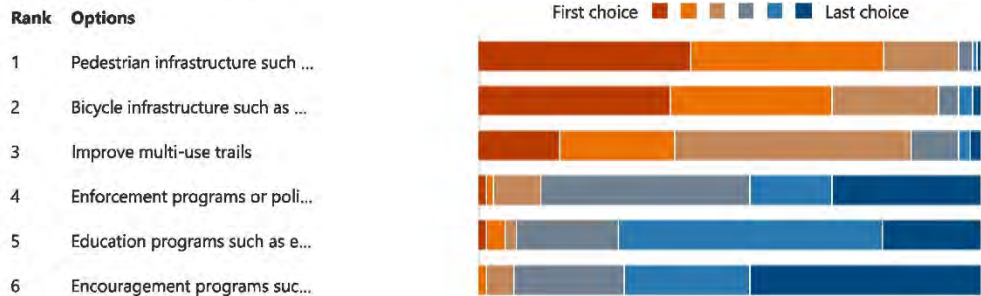
96  
Responses

"All of US1 no crosswalks and 5 has no room for bikes or passing"  
 "US 1 has no safe pedestrian crossings from Big Lots all the way to the ..."  
 "US 1 & Hwy 5. Too busy and autos fill all lanes."

18 respondents (19%) answered **intersection** for this question.



10. How would you prioritize the following bicycle or pedestrian projects in Aberdeen? Please arrange the following options to show the highest priority at the top and lowest priority at the bottom.



11. What are one or two improvements the Town could do to make biking/walking safer and/or more appealing?

115  
Responses

Latest Responses

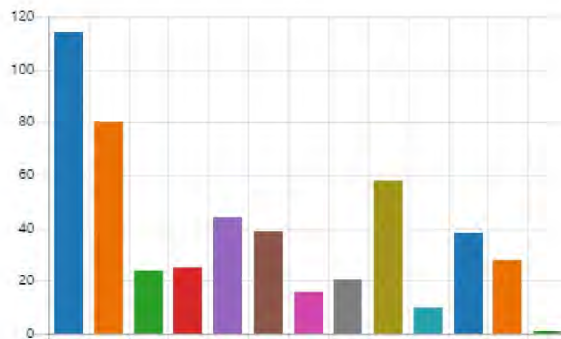
- "Improve and add designated crosswalks with lights"
- "Pedestrian bridges over US1, sidewalks on Poplar Street"
- "Add sidewalks in residential communities like Colonial Heights and B..."

44 respondents (38%) answered **sidewalks** for this question.



12. As Aberdeen grows with new construction and development, which bicycle and pedestrian-related planning efforts should be required of the government and private developers? *Please select what you believe are the **three** most important.*

- Connectivity between neighb... 114
- Safe biking or walking spaces ... 80
- Landscaped areas in the medi... 24
- Signage making motorists aw... 25
- Adequate lighting along bicyc... 44
- Marked crosswalks 39
- Enhanced streetscapes throug... 16
- Traffic calming measures to lo... 21
- Wide paved shoulders or bicy... 58
- Bicycle parking 10
- Buffers between the sidewalk ... 38
- Pedestrian countdown signals 28
- Other 1



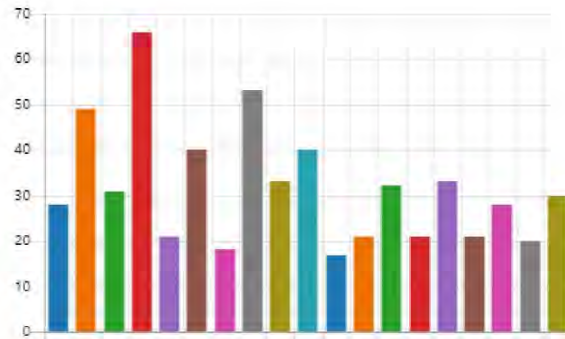




14. During the planning process, the following proposed projects have been developed in coordination with the Steering Committee and public input. Proposed projects are split into two project types: linear projects, which include new sidewalks, bicycle lanes, and shared-use paths; and spot projects, which include crosswalks at intersections and pedestrian lighting improvements.

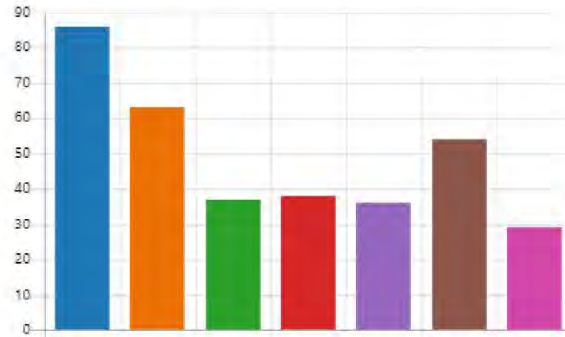
Please pick your top **five** favorite proposed linear projects (shown as maroon lines on the map).

- 1) Off-road connector between... 28
- 2) Shared-use path connector ... 49
- 3) Sidewalk/shared-use path o... 31
- 4) Aberdeen Creek Trail 66
- 5) Sidewalks along Magnolia ... 21
- 6) Extend sidewalks on both si... 40
- 7) Sidewalk/shared-use path a... 18
- 8) Shared-use path on NC5 fr... 53
- 9) Shared-use path on NCS fr... 33
- 10) Bicycle facility along Bethe... 40
- 11) Elm St sidewalk extensions... 17
- 12) Shared-use path on Sycam... 21
- 13) Shared-use path along eas... 32
- 14) Sidewalk on Saunders Ave,... 21
- 15) Sidewalk along Bethesda S... 33
- 16) Connector on S Pinehurst ... 21
- 17) Legacy Connector Connec... 28
- 18) Sidewalk connector on Pe... 20
- 19) Shared-use path to access... 30



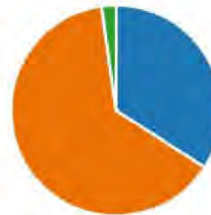
15. Please pick your top three favorite spot projects (shown as yellow dots)

- 1) Pedestrian crosswalks and s... 86
- 2) Study additional crossing o... 63
- 3) Intersection safety improve... 37
- 4) Lighting along Bethesda Rd 38
- 5) Lighting along Bethesda Ave 36
- 6) Pedestrian crossing accom... 54
- 7) Pedestrian crossing accom... 29



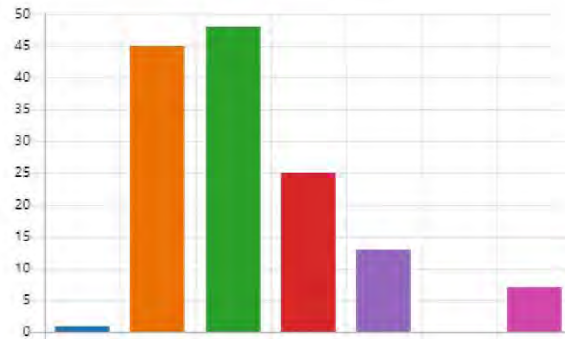
16. Gender

- Male 47
- Female 88
- n/a 3



17. Age

- 18-24 1
- 25-34 45
- 35-44 48
- 45-54 25
- 65-74 13
- 75 or older 0
- n/a 7







## APPENDIX C: PRIORITIZATION

### *Sidewalk Projects Prioritization Scores*

ID	Location	Prioritization Score	Prioritization Rank
11	Elm St sidewalk extensions from Thomas Ave to Sycamore St.	75.0	1
18	Sidewalk connector on Pee Dee Rd	75.0	1
3	Sidewalk/mixed use path on Saunders Blvd	75.0	1
14	Sidewalk on Saunders Ave, Wilder Ave, and S Pinehurst St (Access to Colonial Heights Park)	72.0	4
5	Sidewalks along Magnolia Dr, Mike Pl and Atrium St	57.0	5
7	Sidewalk/mixed use path along Midway Rd	57.0	5
16	Roseland Road	57.0	5
28	Montford Street Sidewalk Connector	57.0	5
29	N Sycamore Street Sidewalk Connector	57.0	5
30	S Sycamore Street Sidewalk Connector	57.0	5
6	Extend sidewalks on both sides of Poplar St from Peach Ave to meet planned sidewalks at Providence Pl (EB-6001)	51.0	11
15	Sidewalk along Bethesda St from Elm St to NC 211	49.0	12
32	Martin Farms Sidewalk/Trail	35.0	13
31	Park Drive Sidewalk Connector	31.0	14

### *Bicycle Projects Prioritization Scores*

ID	Location	Prioritization Score	Prioritization Rank
34	Pinehurst Street paved shoulders	58.0	1
6	Pavement markings (sharrows) and share the road signage on Poplar Street	54.0	2
10	Bicycle facility along Bethesda Rd from Bethesda Ave to Town limits	54.0	2
37	NC 5/W South Street shared lane markings	49.0	4
38	W Main Street shared lane markings	49.0	4
40	Blue Street/Bethesda Avenue shared lane markings	49.0	4

39	E Main Street Bicycle Lane	49.0	4
33	Roseland Road paved shoulders	46.0	8
41	NC 211 paved shoulders	43.0	9
36	US 15/501 paved shoulders	43.0	9
35	US 1 Mixed Use Path	37.0	11

*Shared Use Path Prioritization Scores*

ID	Location	Prioritization Score	Prioritization Rank
2	Mixed-use-path connector between Martin Park and proposed Lake Aberdeen Trail	66.0	1
4	Aberdeen Creek Trails	66.0	1
19	Mixed use path on 15/501	66.0	1
12	Mixed-use path on Sycamore St	60.0	4
17	Legacy Connector	60.0	4
22	Aberdeen Elementary Trail	59.0	6
24	Paint Hill Trail	56.0	7
9	Greenway to Rays Mill Pond (using creek and sewer easement)	53.0	8
13	Downtown to Malcolm Blue Farm Greenway	53.0	8
1	Off-road connector between N Poplar St to slightly past Prospect Dr	51.0	10
8	Mixed use path on NC5 from US1/15/501 to Town limits (U-5756 improvements currently include sidewalks)	51.0	10
23	Downtown Exercise Trail	43.0	12
25	One Down Street Trail	37.0	13
26	Ray's Mill Park Trail	37.0	13
27	Aberdeen Sportsplex Trail	37.0	13
20	Bethesda Pines Trail	35.0	16
21	Collinswood Trail	35.0	16

## Appendix D: Funding Sources

The table below provides a list of funding sources, eligible projects, potential award amounts, and match requirements for active transportation infrastructure projects and programs in Aberdeen.

Source	Eligible Activities	Characteristics and Requirements
<b>Federal Funding Sources</b>		
Better Utilizing Investments to Leverage Development (BUILD) Grants	<ul style="list-style-type: none"> <li>Bicycle and pedestrian planning and construction projects are eligible</li> </ul>	<ul style="list-style-type: none"> <li>Federal program by the USDOT</li> <li>Annual, competitive grant program that is merit-based.</li> </ul>
Highway Safety Improvement Program (HSIP)	<ul style="list-style-type: none"> <li>Safety projects that are consistent with the state's Strategic Highway Safety Plan (SHSP)</li> <li>Pedestrian hybrid beacons</li> <li>Roadway improvements that provide separation between pedestrians and motor vehicles, including medians and pedestrian crossing islands.</li> <li>Road diets</li> </ul>	<ul style="list-style-type: none"> <li>Typically requires 10% match</li> <li>\$2.318 billion authorized in FY 2018</li> </ul>
National Priority Safety Program (Section 405)	<ul style="list-style-type: none"> <li>Training law enforcement on state laws applicable to pedestrian and bicycle safety</li> <li>Enforcement mobilizations and campaigns designed to enforce those state laws</li> <li>Public education and awareness programs designed to inform motorists, pedestrians, and bicyclists of those state laws</li> </ul>	<ul style="list-style-type: none"> <li>Only states where the annual combined pedestrian and bicyclist fatalities exceed 15 percent of the total annual crash fatalities are eligible</li> <li>Requires 20% state match</li> <li>\$14 million authorized in FY 2017</li> </ul>
State and Community Highway Safety Grant Program (Section 402)	Education, enforcement, and research programs designed to reduce traffic crashes, deaths, injuries, and property damage	<ul style="list-style-type: none"> <li>Administered by the Governor's Representative for Highway Safety</li> <li>\$250 million authorized in FY 2017</li> </ul>
Surface Transportation Block Grant (STBG) Program	<ul style="list-style-type: none"> <li>Recreational trail projects eligible under 23 U.S.C. 206</li> <li>Pedestrian and bicycle projects in accordance with 23 U.S.C. 217</li> <li>Modifications to comply with accessibility requirements under the ADA</li> <li>Safe Routes to School Program</li> </ul>	<ul style="list-style-type: none"> <li>Project must be identified in STIP and consistent with the Long-Range Statewide Transportation Plan and the Metropolitan Transportation Plan(s)</li> <li>State may obligate up to 15 percent of the STBG amounts suballocated for that year for use in areas with a population of 5,000 or less on roads functionally classified as minor collectors.</li> <li>\$11.7 billion authorized in FY 2018</li> </ul>
Transportation Alternatives (TA)  <i>Set-aside of the STBG Program</i>	<ul style="list-style-type: none"> <li>Bicycle and pedestrian facilities</li> <li>Recreational trails</li> <li>Safe Routes to School projects</li> <li>Technical assistance</li> <li>Programmed through the Strategic Transportation Investments – Strategic Mobility Formula process</li> </ul>	<ul style="list-style-type: none"> <li>Typically requires 20% match</li> <li>Can be received directly by local governments</li> <li>Competitive funding process</li> <li>\$850 million set aside in FY 2018</li> </ul>

Source	Eligible Activities	Characteristics and Requirements
<b>State Funding Sources</b>		
Clean Water Management Trust Fund (CWMTF)	<ul style="list-style-type: none"> <li>• Projects that enhance or restore degraded waters, acquire land with ecological, cultural, and historic significance</li> <li>• Greenway (shared use path) projects are eligible</li> <li>• Innovative stormwater projects</li> </ul>	<ul style="list-style-type: none"> <li>• Requires matching funds</li> <li>• Annual grant cycle</li> </ul>
Downtown Associate Community Program	<ul style="list-style-type: none"> <li>• Technical assistance for downtown revitalization projects from the NC Main Street &amp; Rural Planning Center</li> </ul>	<ul style="list-style-type: none"> <li>• Competitive application process every other year</li> <li>• Municipalities with populations less than 50,000 and that are not already designated as an active Main Street or Small Town Main Street community</li> </ul>
Land and Water Conservation Fund (LWCF)	<ul style="list-style-type: none"> <li>• Land acquisition and/or development projects for public outdoor recreation and/or to protect outstanding natural or scenic resources</li> <li>• Can include new or renovated outdoor recreational facilities and support facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Requires 50% match</li> <li>• Projects must be on a single site</li> <li>• Administered by the Division of Parks and Recreation</li> </ul>
Parks and Recreation Trust Fund (PARTF)	Acquisition and/or development of park and recreational projects	<ul style="list-style-type: none"> <li>• Requires 50% match</li> <li>• Administered by the Division of Parks and Recreation</li> </ul>
Powell Bill	Municipalities may use Powell Bill funds to resurface, repair, or widen streets, or for the planning, construction and maintenance of bikeways, greenways, or sidewalks.	<ul style="list-style-type: none"> <li>• Annual allocation from the State to qualifying municipalities</li> </ul>
Recreational Trails Program (RTP)	<ul style="list-style-type: none"> <li>• Trail construction</li> <li>• Trail facilities and amenities</li> <li>• Programs that promote safety and environmental protection as they relate to recreational trail projects</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum grant award \$200,000</li> <li>• Requires 25% match</li> <li>• Federal funds managed by the Division of Parks and Recreation</li> </ul>
Safe Routes to School (SRTS)	<ul style="list-style-type: none"> <li>• Infrastructure projects within 2 miles of a K-8 school</li> <li>• Project must be within the public right-of-way</li> </ul>	<ul style="list-style-type: none"> <li>• No match required</li> <li>• Currently funding with leftover SRTS funds, once expended TA funds will be used and programmed through the Strategic Transportation Investments – Strategic Mobility Formula process</li> </ul>
<b>Local Funding Sources</b>		



Source	Eligible Activities	Characteristics and Requirements
Capital Reserve Fund	May be used to fund pedestrian infrastructure projects	<ul style="list-style-type: none"> <li>• The Town Council would establish the fund through an ordinance</li> <li>• May be financed through Town budget allocations, grants, and donations</li> </ul>
Community Crowdfunding	Unrestricted source of funds, would apply to pedestrian infrastructure projects and programs	<ul style="list-style-type: none"> <li>• Residents make monetary contributions through online platforms such as Indiegogo</li> <li>• Town would pay a nominal fee</li> </ul>
Fees	The fee ordinance would establish which projects are eligible	<ul style="list-style-type: none"> <li>• Would require adoption by the Town Council</li> <li>• Fee types may include stormwater fees assessed per area of impervious surface or streetscape fees assessed per length of street frontage</li> </ul>
General Obligation Bonds	May be used to fund pedestrian infrastructure projects	<ul style="list-style-type: none"> <li>• Would require adoption by the Town Council</li> <li>• Would require approval by Town residents</li> </ul>
Special Tax District	May be levied by the municipality to raise funds to provide services or fund projects such as pedestrian infrastructure projects	<ul style="list-style-type: none"> <li>• Would require adoption by the Town Council</li> </ul>
Tax Increment Financing	Pedestrian infrastructure improvements, land acquisition, utilities, and other improvements	<ul style="list-style-type: none"> <li>• Increased property values resulting from the constructed facility are used to pay the debt borrowed to build the facility</li> </ul>

**Pedestrian and Bicycle Funding Opportunities**  
**U.S. Department of Transportation Transit, Highway, and Safety Funds**  
 Revised May 24, 2018

This table indicates potential eligibility for pedestrian and bicycle projects under U.S. Department of Transportation surface transportation funding programs. Additional restrictions may apply. See notes and basic program requirements below, and see program guidance for detailed requirements. Project sponsors should fully integrate nonmotorized accommodation into surface transportation projects. Section 1404 of the Fixing America's Surface Transportation (FAST) Act modified 23 U.S.C. 109 to require federally-funded projects on the National Highway System to consider access for other modes of transportation, and provides greater design flexibility to do so.

Key: \$ = Funds may be used for this activity (restrictions may apply) \$* = See program-specific notes for restrictions. -\$ = Eligible, but not competitive unless part of a larger project.															
Activity or Project Type	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds														
	BUILD	TIFIA	FTA	ATI	CMAP	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTPP
Access enhancements to public transportation (includes benches, bus pads)	\$	\$	\$	\$	\$		\$	\$	\$						\$
ADA/504 Self Evaluation / Transition Plan								\$	\$	\$		\$			\$
Bicycle plans			\$					\$	\$		\$	\$			\$
Bicycle helmets (project or training related)								\$	\$SRTS		\$		\$*		
Bicycle helmets (safety promotion)								\$	\$SRTS		\$				
Bicycle lanes on road	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Bicycle parking	-\$	-\$	\$	\$	\$		\$	\$	\$	\$	\$				\$
Bike racks on transit	\$	\$	\$	\$	\$			\$	\$						\$
Bicycle repair station (air pump, simple tools)	-\$	-\$	\$	\$	\$			\$	\$						\$
Bicycle share (capital and equipment, not operations)	\$	\$	\$	\$	\$		\$	\$	\$						\$
Bicycle storage or service centers (example: at transit hubs)	-\$	-\$	\$	\$	\$			\$	\$						\$
Bridges / overcrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Bus shelters and benches	\$	\$	\$	\$	\$		\$	\$	\$						\$
Coordinator positions (State or local)					\$ 1 per State			\$	\$SRTS		\$				
Crosswalks (new or retrofit)	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Curb cuts and ramps	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Counting equipment			\$	\$		\$	\$	\$	\$	\$	\$	\$*			\$
Data collection and monitoring for pedestrians and/or bicyclists			\$	\$		\$	\$	\$	\$	\$	\$	\$*			\$
Historic preservation (pedestrian and bicycle and transit facilities)	\$	\$	\$	\$				\$	\$						\$
Landscaping, streetscaping (pedestrian and/or bicycle route; transit access); related amenities (benches, water fountains); generally as part of a larger project	-\$	-\$	\$	\$			\$	\$	\$						\$
Lighting (pedestrian and bicyclist scale associated with pedestrian/bicyclist project)	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Maps (for pedestrians and/or bicyclists)			\$	\$	\$			\$	\$		\$	\$*			
Paved shoulders for pedestrian and/or bicyclist use	\$	\$			\$*	\$	\$	\$	\$		\$				\$

Key: \$ = Funds may be used for this activity (restrictions may apply). \$* = See program-specific notes for restrictions. ~\$ = Eligible, but not competitive unless part of a larger project.															
Activity or Project Type	Pedestrian and Bicycle Funding Opportunities U.S. Department of Transportation Transit, Highway, and Safety Funds														
	BUILD	TIFIA	FTA	ATI	CMAQ	HSIP	NHPP	STBG	TA	RTP	SRTS	PLAN	NHTSA 402	NHTSA 405	FLTP
Pedestrian plans			\$					\$	\$		\$	\$			\$
Recreational trails	~\$	~\$						\$	\$	\$					\$
Road Diets (pedestrian and bicycle portions)	\$	\$					\$	\$	\$	\$					\$
Road Safety Assessment for pedestrians and bicyclists							\$		\$			\$			\$
Safety education and awareness activities and programs to inform pedestrians, bicyclists, and motorists on ped/bike safety								\$SRTS	\$SRTS		\$	\$*	\$*	\$*	
Safety education positions								\$SRTS	\$SRTS		\$		\$*		
Safety enforcement (including police patrols)								\$SRTS	\$SRTS		\$		\$*	\$*	
Safety program technical assessment (for peds/bicyclists)								\$SRTS	\$SRTS		\$	\$*	\$		
Separated bicycle lanes	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Shared use paths / transportation trails	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$
Sidewalks (new or retrofit)	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$				\$
Signs / signals / signal improvements	\$	\$	\$	\$	\$	\$	\$	\$	\$		\$				\$
Signed pedestrian or bicycle routes	\$	\$	\$	\$	\$		\$	\$	\$		\$				\$
Spot improvement programs	\$	\$	\$			\$	\$	\$	\$	\$	\$				\$
Stormwater impacts related to pedestrian and bicycle projects	\$	\$	\$	\$		\$	\$	\$	\$	\$	\$				\$
Traffic calming	\$	\$	\$			\$	\$	\$	\$		\$				\$
Trail bridges	\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Trail construction and maintenance equipment								\$RTP	\$RTP	\$					
Trail/highway intersections	\$	\$			\$*	\$	\$	\$	\$	\$	\$				\$
Trailside and trailhead facilities (includes restrooms and water, but not general park amenities; see program guidance)	~\$*	~\$*						\$*	\$*	\$*					\$
Training					\$	\$		\$	\$	\$	\$	\$*	\$*		
Training for law enforcement on ped/bicyclist safety laws								\$SRTS	\$SRTS		\$			\$*	
Tunnels / undercrossings for pedestrians and/or bicyclists	\$	\$	\$	\$	\$*	\$	\$	\$	\$	\$	\$				\$

**Abbreviations**

ADA/504: Americans with Disabilities Act of 1990 / Section 504 of the Rehabilitation Act of 1973  
**BUILD**: Better Utilizing Investments to Leverage Development Transportation Discretionary Grants  
**TIFIA**: Transportation Infrastructure Finance and Innovation Act (loans)  
**FTA**: Federal Transit Administration Capital Funds  
**ATI**: Associated Transit Improvement (1% set-aside of FTA)  
**CMAQ**: Congestion Mitigation and Air Quality Improvement Program  
**HSIP**: Highway Safety Improvement Program  
**NHPP**: National Highway Performance Program  
**STBG**: Surface Transportation Block Grant Program

**TA**: Transportation Alternatives Set-Aside (formerly Transportation Alternatives Program)  
**RTP**: Recreational Trails Program  
**SRTS**: Safe Routes to School Program / Activities  
**PLAN**: Statewide Planning and Research (SPR) or Metropolitan Planning funds  
**NHTSA 402**: State and Community Highway Safety Grant Program  
**NHTSA 405**: National Priority Safety Programs (Nonmotorized safety)  
**FLTP**: Federal Lands and Tribal Transportation Programs (Federal Lands Access Program, Federal Lands Transportation Program, Tribal Transportation Program, Nationally Significant Federal Lands and Tribal Projects)

**Program-specific notes**

Federal-aid funding programs have specific requirements that projects must meet, and eligibility must be determined on a case-by-case basis. For example:

- BUILD: Subject to annual appropriations. See <https://www.transportation.gov/BUILDgrants> for details.



- TIFIA: Program offers assistance only in the form of secured loans, loan guarantees, or standby lines of credit, but can be combined with other grant sources, subject to total Federal assistance limitations.
- FTA/ATI: Project funded with FTA transit funds must provide access to transit. See [Bicycles and Transit](#) and the FTA Final Policy Statement on the [Eligibility of Pedestrian and Bicycle Improvements under Federal Transit Law](#).
  - Bicycle infrastructure plans and projects funded with FTA funds must be within a 3 mile radius of a transit stop or station, or if further than 3 miles, must be within the distance that people could be expected to safely and conveniently bike to use the particular stop or station.
  - Pedestrian infrastructure plans and projects funded with FTA funds must be within a ½ mile radius of a transit stop or station, or if further than ½ mile, must be within the distance that people could be expected to safely and conveniently walk to use the particular stop or station.
  - FTA funds cannot be used to purchase bicycles for bike share systems.
  - FTA encourages grantees to use FHWA funds as a primary source for public right-of-way projects.
- CMAQ projects must demonstrate emissions reduction and benefit air quality. See the CMAQ guidance at [www.fhwa.dot.gov/environment/air\\_quality/cmaq/](http://www.fhwa.dot.gov/environment/air_quality/cmaq/) for a list of projects that may be eligible for CMAQ funds. Several activities may be eligible for CMAQ funds as part of a bicycle and pedestrian-related project, but not as a highway project. CMAQ funds may be used for shared use paths, but may not be used for trails that are primarily for recreational use.
- HSIP projects must be consistent with a State's [Strategic Highway Safety Plan](#) and either (1) correct or improve a hazardous road location or feature, or (2) address a highway safety problem.
- NHPP projects must benefit National Highway System (NHS) corridors.
- STBG and TA Set-Aside: Activities marked “\$SRTS” means eligible only as an SRTS project benefiting schools for kindergarten through 8<sup>th</sup> grade. Bicycle transportation nonconstruction projects related to safe bicycle use are eligible under STBG, but not under TA (23 U.S.C. 217(a)).
- RTP must benefit recreational trails, but for any recreational trail use. RTP projects are eligible under TA and STBG, but States may require a transportation purpose.
- SRTS: FY 2012 was the last year for SRTS funds, but SRTS funds are available until expended.
- Planning funds must be used for planning purposes, for example:
  - Maps: System maps and GIS;
  - Safety education and awareness: for transportation safety planning;
  - Safety program technical assessment: for transportation safety planning;
  - Training: bicycle and pedestrian system planning training.
- Federal Lands and Tribal Transportation Programs (FLTTP) projects must provide access to or within Federal or tribal lands:
  - Federal Lands Access Program (FLAP): Open to State and local entities for projects that provide access to or within Federal or tribal lands.
  - Federal Lands Transportation Program: For Federal agencies for projects that provide access within Federal lands.
  - Tribal Transportation Program: available for federally-recognized tribal governments for projects within tribal boundaries and public roads that access tribal lands.
- NHTSA 402 project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: <http://www.ghsa.org/html/about/shsos.html>
- NHTSA 405 funds are subject to State eligibility, application, and award. Project activity must be included in the State's Highway Safety Plan. Contact the State Highway Safety Office for details: <http://www.ghsa.org/html/about/shsos.html>

#### **Cross-cutting notes**

- FHWA Bicycle and Pedestrian Guidance: [http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/)
- **Applicability of 23 U.S.C. 217(i) for Bicycle Projects:** 23 U.S.C. 217(i) requires that bicycle facilities “be principally for transportation, rather than recreation, purposes”. However, sections 133(b)(6) and 133(h) list “recreational trails projects” as eligible activities under STBG. Therefore, the requirement in 23 U.S.C. 217(i) does not apply to recreational trails projects (including for bicycle use) using STBG funds. Section 217(i) continues to apply to bicycle facilities other than trail-related projects, and section 217(i) continues to apply to bicycle facilities using other Federal-aid Highway Program funds (NHPP, HSIP, CMAQ). The transportation requirement under section 217(i) is applicable only to bicycle projects; it does not apply to any other trail use or transportation mode.
- There may be occasional DOT or agency incentive grants for specific research or technical assistance purposes.
- Aspects of many DOT initiatives may be eligible as individual projects. For example, activities above may benefit Ladders of Opportunity; safe, comfortable, interconnected networks; environmental justice; equity; etc.

Source: FHWA Pedestrian and Bicycle Funding Opportunities, May 24, 2018, [https://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/funding/funding\\_opportunities.cfm](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm)